

A Deposit Return Scheme for Scotland

Full Business Case Stage 1



Scottish Government
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Executive Summary

Introduction

The Scottish Government is committed to creating a more circular economy where things are made to last, preventing litter and addressing climate change for the betterment of our environment, economy and society. The Scottish Government is committed to ambitious targets to increase the recycling rate and recognises that fresh interventions are needed to bring about the systemic and behaviour change necessary to fulfil these aspirations.

It is against this backdrop that in the 2017 Programme for Government, the First Minister committed to introducing a Deposit Return Scheme (DRS) for drinks containers for Scotland.

This Full Business Case (FBC) Stage 1 demonstrates how a successful scheme will contribute to Scotland's 2025 target to increase the national recycling rate to 70% and to *Towards a Litter-Free Scotland*, the national litter strategy which aims to effect a wholesale shift in national policy and practice towards prevention. It reflects the aim of Scotland's circular economy strategy, *Making Things Last*, to ensure that as many materials as possible are kept in high-value use, through a closed loop system and/or high-value recycling. The DRS, and the social and economic benefits which it seeks to deliver, also sit within the context of the Scottish Government's Economic Action Plan.

The case for Scotland's DRS is being presented in two stages. Stage 1 provides the overarching framework for the preferred scheme design and commercial approach. Stage 2 will offer a greater level of technical and commercial detail.

This FBC Stage 1 identifies a preferred scheme design, building on the Outline Business Case (OBC) published in May 2018 and further analysis and consultation that has subsequently taken place.

The document follows HM Treasury's Five Case Model of business case development and comprises: the Strategic Case, the Socio-Economic Case, the Commercial Case, the Financial Case and the Management Case.

The Strategic Case sets the international and European strategic drivers for change, with a focus on the Scottish policy and strategic context. It demonstrates how the spending proposal provides synergy and strategic fit and is based on a robust and evidence-based case for change. This includes the rationale of why intervention is needed, as well as a clear definition of outcomes and the potential of what can be achieved.

Four investment objectives have been identified which inform the development of the preferred scheme design and against which its impact will be measured:

- Improving recycling quantity.
- Improving recycling quality.

- Encouraging wider behaviour change around materials.
- Delivering maximum economic and societal benefit for Scotland during the transition to a low carbon world.

Of the 12 components of the scheme design identified in the OBC, seven are considered in the Socio-Economic Case and five (which relate to the most effective means of delivering the final scheme) are considered in the Commercial Case.

The selection of individual components has been informed by:

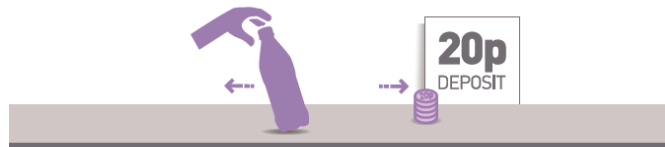
- The public consultation responses. The consultation received 3,215 submissions.
- Evidence and the revised Net Present Value (NPV) model, business and regulatory impact assessment (BRIA), equalities impact assessment (EQIA) etc.
- A review of international best practice.
- Feedback from a series of stakeholder engagements.

The key output from the Socio-Economic Case is the preferred scheme design. This is described as:

- Return to any place of purchase.
- Including PET, metal cans and glass bottles.
- With a 20p deposit.
- A target capture rate of 90%.

SCOTLAND'S DEPOSIT RETURN SCHEME

BUY DRINK. PAY DEPOSIT



CONTAINERS RECYCLED

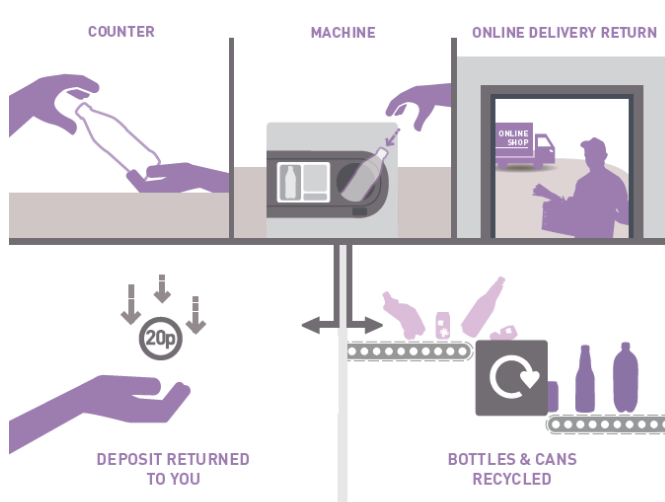


TAKE BACK TO A PLACE THAT SELLS DRINKS TO TAKE AWAY*

*SOME BUSINESSES, LIKE RESTAURANTS, WILL ONLY TAKE BACK DRINKS SOLD ON PREMISES



RETURN OPTIONS



DEPOSIT RETURN INCREASES QUALITY
SO BOTTLES CAN BE RECYCLED
BACK INTO BOTTLES



TARGET CAPTURE RATE:

90%

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The NPV and Benefit-Cost Ratio (BCR) for the preferred scheme design are:

Scheme Design	Net Present Value	Benefit-Cost Ratio
Preferred Scheme	£705m - £141m	1.2 – 1.03

The remaining five components, which relate to the most effective means of delivering the final scheme, are considered in the Commercial Case, which presents the recommendation for the establishment of the Scheme Administrator.

The key findings from the Commercial Case of the FBC are summarised below:

Four potential delivery models have been identified and considered for the Scheme Administrator:

- Option 1A – 100% public sector ownership of non-profit Scheme Administrator. RVMs, counting and bulking centres procured by public sector. Logistics outsourced. Public sector borrowing to fund upfront capital investment.
- Option 1B – As per Option 1A, with the exception of reverse vending machines (RVMs), which will be procured by retailers, who will be reimbursed by the Scheme Administrator through the handling fee.
- Option 2 – 100% privately owned non-profit Scheme Administrator. Counting and bulking centres procured by Scheme Administrator. Logistics outsourced. RVMs procured by retailers and reimbursed by the Scheme Administrator through the handling fee.
- Option 3 – Public:Private (20%:80%) non-profit joint venture. Counting and bulking centres procured by Scheme Administrator. Logistics outsourced. RVMs procured by retailers and reimbursed by the Scheme Administrator through the handling fee.

The analysis in this section concludes that Option 2 – a privately-owned, non-profit Scheme Administrator – has the benefit of being the most common route adopted in recent international deposit return schemes and has a track record of minimising costs and achieving high rates of recycling. Specifically, this model:

- Places operational and financial risk exposure with producers¹, in line with Extended Producer Responsibility.
- Has recent precedent, with several European, privately operated, non-profit model schemes functioning effectively.

¹ A producer is defined as the brand owner.

- Maximises scope for buy in from the private sector, with producers and retailers indicating through consultation that, should the scheme proceed, they would want to operate it and therefore as owners and funders they will be more incentivised to perform.
- Requires public sector monitoring of performance through regulation rather than direct control.

A public sector Scheme Administrator would:

- Offer greater public sector control of the scheme than would be available through a private sector solution, potentially realising the additional benefits identified in Section 3.6.2 to a greater degree than the private sector options.
- Require less sophisticated regulation, given the direct control of the Scottish Government.
- Be more aligned to the feedback received from the public via the public consultation that the preferred ownership model was involving the public sector, securing greater confidence in the scheme.
- Be likely to have a budgetary implication for the Scottish Government, including capital budgets during the establishment of the scheme and on-going capital and revenue budgets .

Taking into account the evidence, this FBC concludes that a 100% private sector non-profit solution is preferred. Further work remains (*see Section 3.7*) to determine the basis of procurement of a private sector Scheme Administrator, the detail of the regulatory regime to be applied and the detailed governance arrangements relating to the Scheme Administrator.

The Financial Case presents modelling on the upfront capital costs, overall investment requirements, operating costs, estimated profits, income from sale of materials and other key financial data relating to the preferred scheme design.

The financial forecast and associated financial statements are developed across a ten-year period which comprises the 'Observatory Period' (Year 0 to Year 5) and steady state operations (Year 6 to Year 9). It is developed from the Scheme Administrator's perspective and has adopted a similar treatment of deposit inflows and outflows as the Norwegian deposit return scheme, whereby the net benefit of these flows i.e. the value of unredeemed deposits, can be recognised as revenue in the profit and loss accounts of the Scheme Administrator and applied against scheme expenses.

A key assumption is the non-recognition of accrued cash as unredeemed deposit revenue in the profit and loss accounts until Year 6 onwards. In practice, the Observatory Period will be dictated by the volume and quality of evidence the Scheme Administrator is able to collate in the initial years of the scheme in order to provide sufficient audit comfort that a reasonable assumption with respect to the volume of deposits has been made.

In addition, the financial modelling has assumed that this accrued cash balance (approximately £190 million) remains within the scheme across the steady state. However, the Scheme Administrator may choose to use this in alternative ways e.g. to be applied to scheme expenses, thereby offsetting producer fees or to fund future borrowing requirements.

The final section, the Management Case, outlines the governance, management and resourcing structures and procedures which have been put in place during the design phase of the scheme, providing robust project management and accountability suitable to a project of this scope and complexity.

1 STRATEGIC CASE

Strategic Case Key Messages:

- The Scottish Government is committed to creating a more circular economy, preventing litter and addressing climate change.
- Current recycling rates and rate of growth, the quality of recycled material, the impact of litter in Scottish towns and countryside and the economic and social opportunities offered by addressing these issues reaffirm the need for action.
- Four investment objectives are identified for assessing the impact of a Scottish Deposit Return Scheme (DRS):
 - Improving recycling quantity.
 - Improving recycling quality.
 - Encouraging wider behaviour change around materials.
 - Delivering maximum economic and societal benefit for Scotland during the transition to a low carbon world.
- This Full Business Case (FBC) Stage 1 identifies a preferred scheme design – developed from work completed for the Outline Business Case (OBC), submissions received to the public consultation, additional data gathered, and modelling work that has been undertaken since the OBC was completed.

1.1 Introduction

- 1.0 This Full Business Case (FBC) has been prepared following the HM Treasury Five Case Model of business case development. It is published to set out the approach to developing a preferred scheme design in a clear and transparent way. This FBC is being presented in two stages. Stage 1 provides the reasons for the preferred scheme design and commercial approach but not the final detail. Stage 2 will provide this complete level of detail.
- 1.1 The Outline Business Case (OBC) identified four principles of the Deposit Return Scheme (DRS) for Scotland. These are now referred to as investment objectives to reflect FBC best practice.
- 1.2 This Strategic Case seeks to demonstrate that the spending proposal provides synergy and strategic fit and is based on a robust and evidence-based case for change. This includes the rationale of why intervention is needed, as well as a clear definition of outcomes and the potential scope for what is to be achieved.
- 1.3 This section sets the international and European strategic drivers for change with a focus on the Scottish policy and strategic context.
- 1.4 The Scottish Government consultation (Paragraph 2.10 in the Socio-Economic Case) received 3,215 submissions, which included 1,048 campaign responses organised by campaign group *Have You Got the Bottle*². Of the remaining responses, 159 were from organisations and 2,008 from individuals.
- 1.5 Support amongst the public for the introduction of a DRS is high, with a poll for ITV Tonight³ (2,000 people, UK) indicating that 75% of people would support the introduction of such a scheme.
- 1.6 There was widespread agreement amongst both organisational and individual respondents that a well-run and appropriately targeted DRS could provide opportunities in relation to improving the environment, changing people's attitudes to recycling and littering, and building the circular economy.
- 1.7 In terms of circular economy benefits, a DRS will help to target 'leaks' (where the material is discarded and no longer retained in the circular loop) of valuable resources, maximise their value and ensure they become an important feedstock for high value re-processing. This will maximise the economic impact for Scotland and create employment opportunities across a range of roles.
- 1.8 Where possible, consideration is also given to the carbon impact of a DRS. This is a measure of the whole-life carbon impacts of waste, from resource extraction and manufacturing emissions, right through to waste management emissions.
- 1.9 DRS will operate as an instrument for implementing Extended Producer Responsibility, which is defined by the Organisation for Economic Co-operation and Development (OECD) as "an environmental policy approach in which a

² [Have You Got the Bottle](#)

³ [ITV News, Plastic: Can You Live Without It?](#)

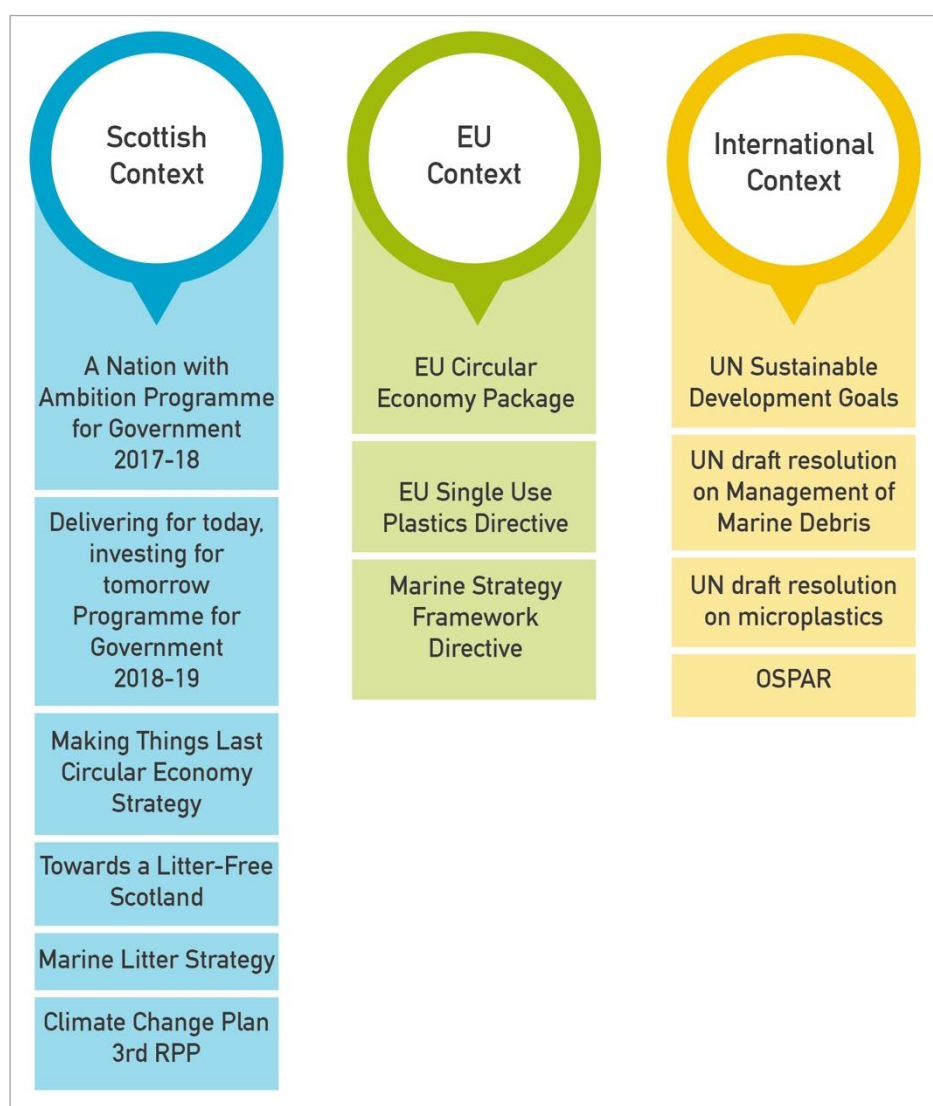
producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle"⁴. It is important that these are proportionate to the benefits gained and look to mitigate any unintended consequences on any actors through scheme design.

1.1.1 Strategic Context

1.10 To realise these circular economy benefits and minimise the challenges, it is necessary to design a scheme tailored to Scotland's geography, population distribution and economic, environmental and social ambitions.

1.11 This approach will be considered within the international and European strategic drivers for change with a focus on the Scottish policy and strategic context (see Figure 1).

Figure 1: Scottish, European and International Strategic Context



⁴ [Organisation for Economic Co-operation and Development, Extended Producer Responsibility](#)

1.1.2 International and European Strategic Context

- 1.12 In 2015, the Scottish Government committed to support the **United Nations Sustainable Development Goals**⁵. 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. A DRS will have a positive impact on a number of these goals, most explicitly Goal 12: Responsible Consumption and Production.
- 1.13 The **United Nations Draft Resolutions on Marine Litter and Microplastics**⁶ (2017) and **Management of Marine Debris**⁷ (2014) both reference the role that deposit return schemes can have on preventing the harmful escape of plastics into marine environments.
- 1.14 The European Parliament voted on 24 October 2018⁸ to introduce a number of new requirements related to the use of single use plastics within the European Union. This included a requirement on member states to separately collect and recycle 90% of plastic beverage bottles by 2025.
- 1.15 The **European Commission's Circular Economy Package**⁹ 2018 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 introduces more ambitious recycling targets for packaging materials and full cost recovery of recycling costs from producers.
- 1.16 Amendments in 2018 to the **EU Waste Framework Directive**¹⁰, proposed as part of the EU Circular Economy Package, introduces new requirements for extended producer responsibility schemes. This includes a requirement that such schemes should recover 100% of the costs under Article 8A (4).

1.1.3 Scottish Strategic and Policy Drivers

- 1.17 The Scottish Government's aim of delivering sustainable economic growth is underpinned by five strategic objectives¹¹ – to make Scotland wealthier and fairer, smarter, healthier, safer and stronger and greener.
- 1.18 The above strategic objectives are supported by the **National Performance Framework**¹². The strategic business case for the introduction of a DRS for Scotland will deliver on the following outcomes:
- We value, enjoy, protect and enhance our environment.

⁵ [UN Sustainable Development Goals](#)

⁶ [The United Nations Environment Programme \(December 5, 2017\) Draft resolution on marine litter and microplastics](#)

⁷ [The United Nations Environment Programme \(November 7, 2014\) Draft resolution on Management of Marine Debris](#)

⁸ [EU Parliament proposal for a directive on the reduction of the impact of certain plastic products on the environment](#)

⁹ [EU Circular Economy Package](#)

¹⁰ [Amendments to EU Waste Framework Directive](#)

¹¹ [Strategic Objectives, Scottish Government](#)

¹² [National Outcomes, Scottish Government](#)

- We have a globally competitive, entrepreneurial, inclusive and sustainable economy.
- 1.19 **Delivering for today, investing for tomorrow: the Scottish Government's Programme for Government 2018-2019**¹³ reinforced the commitment to introduce a DRS (initially made in the Programme for Scotland 2017-18¹⁴) following public consultation. The views shared via the consultation will help to design an effective system that will work well for everyone in Scotland. The introduction of a DRS for Scotland will contribute to the following strategies:
- 1.20 **Making Things Last** - Scotland's first circular economy strategy¹⁵ sets out the Scottish Government's priorities for moving towards a more circular economy – where products and materials are kept in high value use for as long as possible. Realising this strategy will deliver benefits including:
- **Environmental** – cutting waste and carbon emissions and reducing reliance on scarce resources.
 - **Economic** – improving productivity, opening up new markets and improving resilience, with potential savings of £500 million to £800 million per year identified in the food and drink and broader bio-economy sectors.
 - **Social** – more lower cost options to access the goods we need, with opportunities for social enterprises.
- 1.21 The strategy states that the role of a DRS will be further considered to support long-term Scottish targets to recycle 70% of all waste, and to send no more than 5% of all waste to landfill, both by 2025.
- 1.22 **Towards a Litter-Free Scotland**¹⁶ is Scotland's first national litter strategy with a focus on litter prevention. The aim is to reduce the estimated £46 million of public money spent removing litter and flytipping from the environment each year and the wider negative impacts of litter, representing at least a further £361 million in costs on our society and economy. Achieving this aim will enable the lost value of littered materials to be recovered which could be worth up to £1.2 million.
- 1.23 This will be achieved through behaviour change (encouraging people to take personal responsibility) and support around infrastructure, information and enforcement.
- 1.24 **A Marine Litter Strategy**¹⁷ was launched in 2014, focused on protecting Scotland's coastal environment. This will contribute to collaborations under The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)¹⁸ and the Marine Strategy Framework Directive¹⁹.

¹³ [Programme for Government 2018-19, Scottish Government](#)

¹⁴ [Programme for Government 2017-18, Scottish Government](#)

¹⁵ [Making Things Last, a Circular Economy Strategy for Scotland \(2016\)](#)

¹⁶ [Towards a Litter-Free Scotland, Scotland's National Litter Strategy \(2014\)](#)

¹⁷ [A Marine Litter Strategy for Scotland \(2014\)](#)

¹⁸ [OSPAR Convention](#)

¹⁹ [Marine Strategy Framework Directive](#)

- 1.25 The carbon savings derived from the introduction of a DRS in Scotland will also contribute to objectives set out in the **Climate Change (Scotland) Act 2009**²⁰ and the **Climate Change Plan**²¹, which sets out plans to achieve decarbonisation of the Scottish economy in the period to 2032.
- 1.26 Resource use and waste generation are recognised as key sources of greenhouse gas generation and the Scottish Government reports on progress against both territorial and consumption emissions.

1.2 Assessment of Need

1.2.1 Current recycling rate

- 1.27 Scotland's household recycling rate has increased substantially in the last decade. The latest figures, published in September 2018²² by the Scottish Environment Protection Agency (SEPA), confirm that in 2017 the household recycling rate reached 45.6%. That same year for the first time there was more Scottish waste recycled (1.12 million tonnes) than was landfilled (1.11 million tonnes).
- 1.28 This has been driven by substantial investment by central and local government in kerbside collections. The result has been significant increases in the number of households that have access to kerbside recycling facilities. All 32 local authorities are now nearing completion of these rollouts, covering most of the properties in their area.
- 1.29 The rate of growth in household recycling rates has been slowing. Since 2014, following the introduction of a new methodology for calculating household recycling rates, the rates have only increased by 2.8%. The 2017 rate was only a 0.6% increase on the 2016 figures. It is, therefore, clear that further intervention is required to stimulate growth in household recycling rates in order to achieve national recycling targets for 2025.
- 1.30 Most types of materials used in drinks containers are easily recyclable and there is scope to improve their recycling rates.
- 1.31 Recycling quality remains challenging, with financial and operational constraints limiting the level of segregation that can be achieved at the kerbside. Scotland's Household Recycling Charter²³ will drive some improvements but many more valuable materials continue to be degraded or not separated.
- 1.32 Currently the ownership of recycled materials remains spread across many organisations, including local authorities and private waste management companies. This means there is no critical mass of materials and so limited scope to maximise economic opportunities by managing the materials effectively, offering an aggregated and high-quality feedstock for reprocessing.

²⁰ [Climate Change \(Scotland\) Act 2009](#)

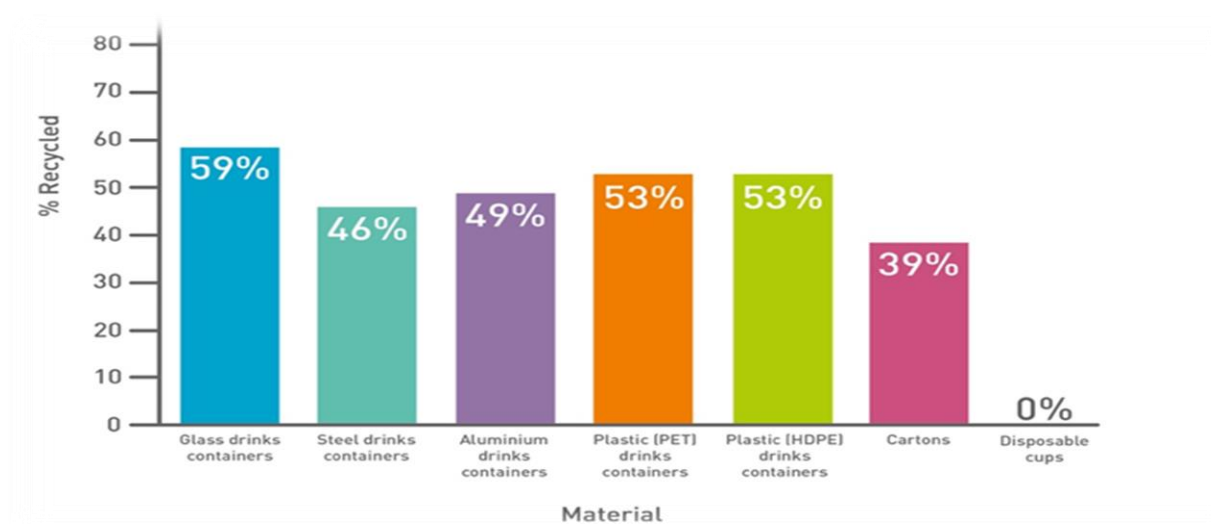
²¹ [Climate Change Plan: The Third Report on Proposals and Policies 2018-2032](#)

²² [SEPA 2017 Household Waste Data](#)

²³ [Charter for Household Recycling](#)

- 1.33 A DRS for drinks containers would: improve segregation of materials, thereby decreasing the opportunities for contamination; incentivise the return of materials, increasing capture rates; and bring the control and ownership of materials in scope under a single body, providing greater opportunities for increased and higher value recycling.
- 1.34 The impact of a DRS on national capture and recycling rates for materials in scope will be slightly higher than the system capture rate itself. This is because some items not returned to the DRS will continue to be returned to other recycling streams.
- 1.35 There are limitations in the available Scottish specific data in relation to sales, waste by material type and material reprocessing of drinks containers. Figure 2 sets out the Household Waste Compositional Analysis²⁴ estimates of recycling rates by material through local authority collections.

Figure 2: Current Local Authority Household Collection of Target Containers



*Disposable cups did not exist as a separate category in the compositional analysis.

- 1.36 Beverage cartons, plastic, glass and metal containers are widely targeted for recycling, either via kerbside collections or recycling points and centres. Despite this there is clearly scope for improving recycling rates, with the best performing deposit return schemes in the world achieving a capture rate of up to 95%.
- 1.37 Single-use disposable cups were not considered as a separate category in the Household Compositional Waste Analysis report but generate a significant volume of waste, little of which is currently recycled.
- 1.38 The Programme for Government commitment is to develop a DRS for Scotland. Refillable schemes operate a logistics and commercial model where industry participants agree and operate standard bottle and collection crate designs, shared logistics and infrastructure arrangements (such as bottle washing and refilling facilities).

²⁴ [The composition of household waste at the kerbside in 2014-15](#)

- 1.39 Across many countries in Europe organised schemes for ‘refillable’ glass bottles are in operation. These schemes are logistically and commercially separate from the recycling deposit return schemes but, where both types of scheme are present in the same nation (e.g. in Finland), they often work alongside each other.
- 1.40 The DRS for Scotland will focus on non-refillable single use drinks containers. There may be scope for a refillable scheme to be developed in the future to complement the DRS.
- 1.41 As well as assessing the amount of targeted material collected, it is important to consider the end destination for those materials. A true circular economy approach is one where the quality of material collected is high enough, that it can displace virgin materials (e.g. plastics made from oil, or aluminium made from bauxite) in high value uses.
- 1.42 As noted above, in section 1.35, specific data on Scottish waste materials often does not exist. The majority of these materials are currently collected co-mingled, i.e. mixed together with other household packaging. For glass, even where it is not co-mingled, the collection method makes it difficult to separate different colours, as a mechanical sort is required.
- 1.43 The Recyclate Quality Reporting Tool²⁵ using data from the Materials Recovery Facility (MRF) Code of Practice²⁶ calculates that between 7% and 13% of non-target and non-recyclable (material that should not be present) materials in metals, plastics and glass, leave MRFs for reprocessing. This contamination from other co-mingled materials is often too costly to separate, and while the majority of a material is collected, the overall amount suitable for high value recycling could be significantly lower.

1.2.2 Litter

- 1.44 The costs of litter, both direct and indirect, are identified in the OBC, informed by Scotland’s Litter Problem²⁷. This report identified the average composition of the litter stream in Scotland.
- 1.45 The categorisation doesn’t differentiate between drinks containers and other containers but the following breakdown, by weight, was identified: plastic bottles (9%), packaging glass (9%) and metal cans (4%). It is not possible to identify beverage cartons, pouches or single use cups within the categories used.
- 1.46 When assessing the contribution to indirect costs, such as a loss of visual amenity, then volume, rather than weight, is likely to be a more accurate indicator of impact. Measured by volume, drinks containers would make up a greater proportion of the litter stream than indicated above.
- 1.47 The Marine Conservation Society’s Great British Beach Clean 2018 survey²⁸ provides a breakdown of the sources of litter and types of materials found. Over

²⁵ [Recyclate Quality Reporting Tool](#)

²⁶ [MRF Code of Practice](#)

²⁷ [Scotland’s Litter Problem](#)

²⁸ [MCS Great British Beach Clean](#)

28% of material is categorised as being littered by the public, while 48% remains unsourced, primarily because it has broken down into fragments too small to identify. Glass and container caps and lids both appear in the top 10 items found in these annual surveys.

1.2.3 Economic Opportunities

- 1.48 Both Scotland's Economic Strategy²⁹ and Manufacturing Action Plan ('A Manufacturing Future for Scotland'³⁰), recognise the economic opportunities presented by 'Making Things Last'. Creating the conditions for a more circular economy helps companies embrace new business models and manufacturing processes and transforms used products into assets. In addition to ensuring that the lifecycle of all resources is maximised, this approach helps to protect against increased volatility and vulnerability in the supply of raw materials.
- 1.49 A DRS will be an exemplar of a circular flow of resources, maximising the financial value of secondary resources to Scotland and creating a potential high value feedstock for industry in Scotland.
- 1.50 The 2018-19 Programme for Government commits to the introduction of an Economic Action Plan and Rural Economy Action Plan. The Economic Action Plan 2018-20³¹ has been published, incorporating a section on sustainable growth and seizing the opportunities in the transition to a circular economy and low carbon economy.

1.3 Scope

- 1.51 The programme has followed the HMT Treasury Five Case Business Model process, starting with the Strategic Outline Case (SOC), moving to the OBC and onto this FBC. This staged approach incorporates the five cases (Strategic, Socio-Economic, Commercial, Financial and Management) at each point but with increasing detail.
- 1.52 The SOC developed a longlist of scheme design types and proposed a shortlist, by excluding those that were not capable of delivering the required outcomes for the four investment objectives. The shortlisted examples were:
- **Example 0:** Do-nothing (No scheme is introduced) was modelled for the purposes of developing a baseline to assess the impacts of no intervention.
 - **Example 1:** Take back to dedicated drop-off points.
 - **Example 2:** Take back to dedicated drop-off points and some shops (with cartons and cups).
 - **Example 3** Take back to any place of purchase.
 - **Example 4** Take back to any place of purchase (with cartons and cups).
- 1.53 The OBC then assessed each of the shortlisted scheme design examples by, wherever possible, calculating an economic value (either cost or benefit) against

²⁹ [Scotland's Economic Strategy, March 2015](#)

³⁰ [A Manufacturing Future for Scotland](#)

³¹ [Economic Action Plan 2018-20](#)

each of the actors in scope of a DRS. This allowed a Net Present Value (NPV) to be calculated.

- 1.54 Where it was not possible to convert the impact directly into an economic value, then a qualitative assessment was undertaken, either via a weighting and scoring matrix or a multi-criteria analysis. This allowed a comparison against these qualitative criteria of the four-example scheme designs to complement the NPV for each option.
- 1.55 The OBC was used to support a public consultation by the Scottish Government. The consultation sought responses to a series of questions on each of the 12 components that comprise a DRS scheme design.
- 1.56 Concurrent to this consultation, ongoing stakeholder engagement and commissioned projects to examine some components in more detail have been used to improve the NPV model and data inputs.
- 1.57 The outputs from the public consultation and this further work are used in this FBC Stage 1 to consider each of the characteristics of the scheme and develop a preferred scheme design.
- 1.58 The Commercial, Financial and Management Cases within the FBC Stage 1 have been developed, based on the preferred scheme design. This will form the basis of the work for the FBC Stage 2, where a detailed business and implementation plan will be developed.

1.3.1 Investment Objectives and Benefits Criteria

1.59 The four investment objectives of Scotland's DRS are:

- Improving recycling quantity.
- Improving recycling quality.
- Encouraging wider behaviour change around materials.
- Delivering maximum economic and societal benefit for Scotland during the transition to a low carbon world.

1.3.2 Investment Objective 1 – Increasing recycling quantity

1.60 Measures in this area relate to improving the overall quantity of material collected for recycling and therefore diverted from landfill, energy from waste or becoming litter. The specific criteria proposed are:

- Increase the tonnage and percentage of targeted materials recycled.
 - Increase the total amount of material collected for recycling in Scotland i.e. avoiding any unintended consequences that result in a reduction of other materials being collected for recycling.
- 1.61 The effect of these measures is a change in disposal costs, which may be positive or negative, for a range of actors across Scotland. The most significant impact will be on local authorities and private waste management operators, as they handle the largest tonnage of materials.

- 1.62 There will be an impact on organisations that have their waste collected. Whether this is charged by weight or by volume, the introduction of a DRS will require a change in container size and/or frequency of collection.
- 1.63 Examples of potential changes include: lower collection costs for businesses, lower disposal costs for local authorities due to less material going to landfill, higher gate fees for co-mingled recycling for local authorities and a loss of revenue for waste management companies servicing their commercial customers.
- 1.64 There are other costs and benefits associated with diverting a larger quantity of material from these other disposal routes and these are captured under the other investment objectives.

1.3.3 Investment Objective 2 – Increasing recycling quality

- 1.65 Measures in this area relate to improving the quality of material generated in Scotland, maximising its economic value as a feedstock for re-processing activities. The specific measures proposed are:
- Increase the tonnage and percentage of targeted materials suitable for high value recycling.
 - Increase the total amount of material collected in Scotland that is suitable for higher value recycling i.e. ensuring that other material currently achieving this goal is not diverted to lower value recycling.
- 1.66 The effect of these two measures should be a larger amount of the targeted material achieving high value recycling and this quality being achieved in Scotland. The impact is that industry in Scotland either benefits from the higher value through use of this feedstock or generates higher income by selling it.

1.3.4 Investment Objective 3 – Encouraging wider behaviour change around materials

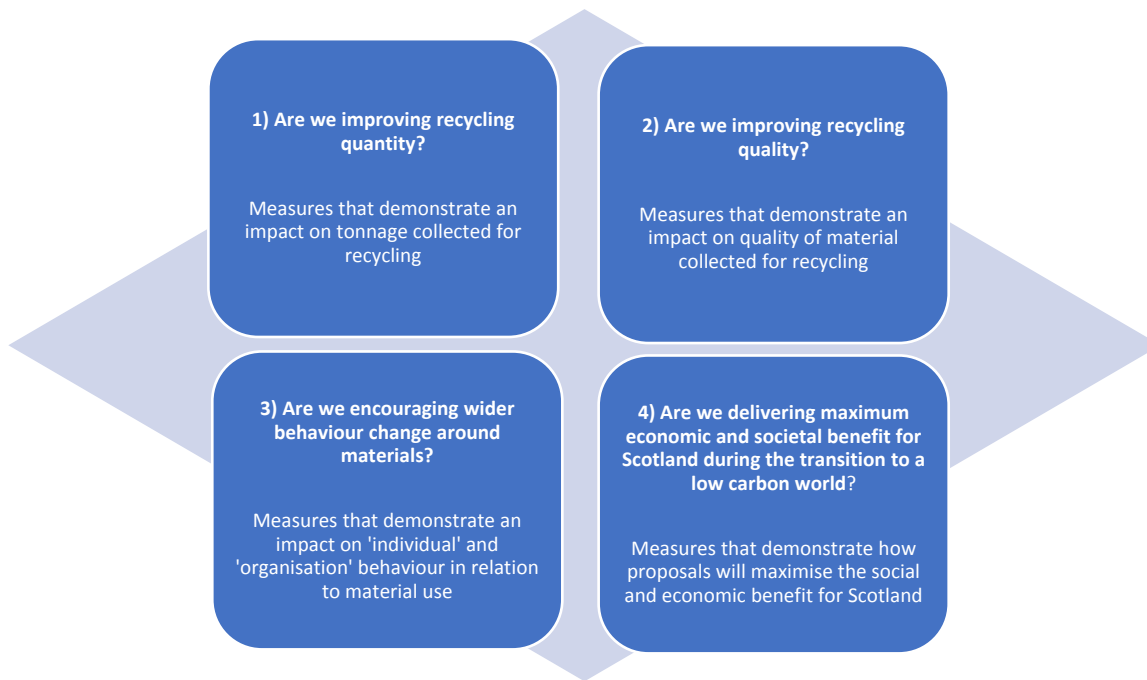
- 1.67 Measures in this area relate to the indirect impacts on material use and disposal by the introduction of a DRS. These go beyond changing the value of the disposal route and value of materials. The proposed criteria are:
- Reduce the quantity of single use beverage containers that are littered by the public.
 - Encourage circular product design by beverage packaging producers e.g. making packaging lighter, increasing recycled content in containers, or designing for increased recyclability.
 - Enable education and engagement on key circular economy messages and challenging aspects of our throwaway society e.g. utilising advertising space at return points.
- 1.68 Capturing more of the targeted material(s) for recycling reduces the number of containers that could potentially enter the litter stream. This could reduce the direct costs to landowners of collecting litter and the scale of a number of indirect impacts of litter, including impact of property prices, crime and mental health.

- 1.69 The experience of other nations with a successful DRS suggests that extremely high capture rate of target materials will be achieved. The true national recycling rate for the materials targeted via a DRS will be slightly higher than the system capture rate itself. This is because some items not returned to DRS will continue to be returned to other recycling streams.
- 1.70 To achieve a high capture rate requires interaction with almost the entire population on a regular basis via return points where the public take back containers to redeem their deposit. These locations could provide valuable advertising opportunities, which could be used to communicate other messages related to the circular economy, for example signposting local authority services for the recycling of materials not included in the DRS.

1.3.5 Investment Objective 4 – Delivering maximum economic and societal benefit for Scotland during the transition to a low carbon world

- 1.71 As well as broader impacts on material use and disposal, the scheme has the potential to have wider economic, social and environmental impacts. The proposed criteria for evaluating these are:
- Demonstrate a net overall positive economic impact (including but not exclusively contributing to a low carbon economy, developing new reprocessing opportunities and generating additional jobs or securing existing jobs).
 - Ensure fairness for all demographic groups e.g. considering the impacts of the deposit level on households on lower incomes.
 - Maximise accessibility to all demographic groups e.g. ensure there is no need to access a private vehicle to redeem deposits.
 - Deliver exemplar circular business practices while still delivering value for money e.g. leasing models for reverse vending machines.
 - Create employment opportunities for groups including those furthest from the labour market.
 - Create opportunities to raise funds for charitable causes, where use of the money can have wider societal benefits.
 - Optimise the positive impacts for small to medium-sized businesses including small retailers.
- 1.72 Potential benefits arising from an intervention are significant and varied. They are spread across many actors from businesses, the public sector and societal benefits. Some of these are measurable and quantifiable while others are more difficult to assess, requiring a more qualitative approach.
- 1.73 The benefits criteria relate to the overall investment objectives, as illustrated in Figure 3.

Figure 3: Relationship between benefits criteria and investment objectives



1.74 These criteria will ensure that the full environmental, economic and social impacts are captured. The completion of a Business and Regulatory Impact Assessment (BRIA) will establish where the benefits and costs are distributed.

1.75 Ensuring fairness and accessibility are key criteria for the Scottish Government and, in this context, links to the principle of climate justice. This is defined as “ensuring collectively and individually we have the ability to prepare for, respond to and recover from climate change impacts – and the policies to mitigate or adapt to them – by considering existing vulnerabilities, resources and capabilities”³².

1.76 Providing an exemplar business model for the adoption of circular economy thinking provides an opportunity to maximise the economic gains in Scotland, inspire other organisations with practical examples and help create markets that otherwise would not exist.

1.77 The delivery of a DRS will generate a range of employment opportunities across management, operational and administrative roles. It is likely that a proportion of these will be entry level jobs, creating opportunities for those furthest from the labour market to learn new skills and gain experience.

1.78 The operation of a DRS will provide the opportunity for charitable donations to generate social and / or environmental benefits. This could be through donations of containers or the deposit to existing charities or new channels and could enhance the net benefit to society.

³² [Banks et al 2014, Climate change and social justice: an evidence review](#)

1.4 Strategic risks (including mitigation and management)

1.79 The main risks associated with the scope of this intervention are shown in Table 1 below, together with their counter measures. Financial risks are addressed in the Financial Case.

Table 1: Key Strategic Risks

Main Risks	Counter measures
Impact on existing contracts and collection arrangements	<p>Increased awareness amongst stakeholders since commitment to introduce a DRS in September 2017, so they can consider impacts in any ongoing contract negotiations.</p> <p>Provide support to local authorities, as those organisations are currently managing most of the material.</p>
Requirement to provide consumer information and fraud mitigation measures requiring labelling	<p>Ensure that any requirement is proportionate to risk.</p> <p>Allow flexibility to adopt different solutions for different circumstances e.g. those putting a few hundred containers onto the market vs those placing tens of thousands.</p>
Risk of fraud by placing a value on containers	<p>Creation of a single scheme administrator will allow a range of control measures to be established, as they will have access to both data and ownership of all the material.</p> <p>Allow flexibility in scheme design for producers to adopt the most appropriate measures to minimise fraud.</p> <p>Consideration of fraud in the determining of a deposit level, so as not to incentivise organised criminal activity to target the scheme.</p>
Poor performance of DRS as a result of inadequate communication with public	<p>The Scottish Government will undertake a public facing consumer marketing campaign ahead of the scheme launch.</p> <p>Zero Waste Scotland will provide stakeholders with marketing collateral to communicate changes to their customers and residents.</p> <p>The Scheme Administrator will be incentivised to invest in up-front and ongoing communication activity.</p>

2 SOCIO-ECONOMIC CASE

Socio-Economic Case Key Messages:

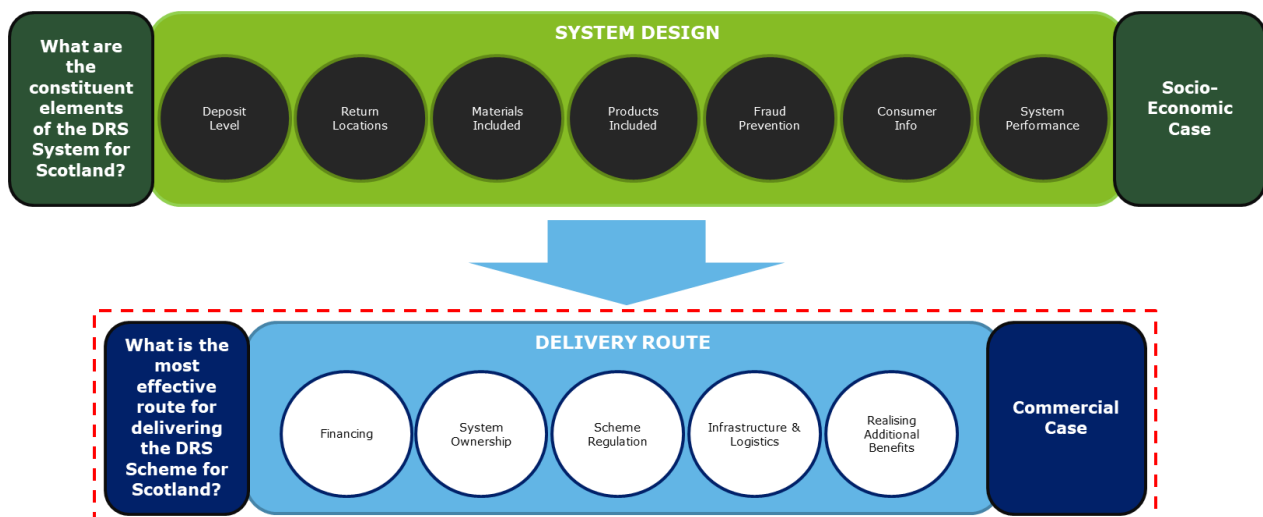
- This Full Business Case (FBC) for a Deposit Return Scheme (DRS) is being presented in two stages. Stage 1 provides the reasons for the preferred scheme design and commercial approach but not the final detail. Stage 2 will provide a complete level of detail.
- Of the 12 components of the scheme design identified in the Outline Business Case (OBC), seven are considered in the Socio-Economic Case and five (which relate to the most effective means of delivering the final scheme) are considered in the Commercial Case.
- The public consultation generated 3,215 submissions (comprising 1,048 campaign responses, 159 organisational responses and 2,008 from individuals).
- The individual components have been informed by:
 - The consultation responses.
 - Evidence and the revised Net Present Value (NPV) model, Business and Regulatory Impact Assessment (BRIA), Equalities Impact Assessment (EQIA) etc.
 - A review of international best practice.
 - Feedback from a series of stakeholder engagements.
- The preferred scheme design is described in full as:
 - Return to any place of purchase.
 - Including PET, metal cans and glass bottles.
 - With a 20p deposit.
 - A target capture rate of 90%.
- The NPV and Benefit-Cost Ratio (BCR) for the preferred scheme design are:

Scheme Design	Net Present Value	Benefit-Cost Ratio
Preferred Scheme	£705m-£141m	1.2 – 1.03

2.1 Development of the Full Business Case Stage 1

- 2.0 This Full Business Case (FBC) for a Deposit Return Scheme (DRS) has been prepared following the HM Treasury Five Case Model of business case development. It is published to set out the approach to developing a preferred scheme design in a clear and transparent way.
- 2.1 The FBC is being presented in two stages. Stage 1 provides the reasons for the preferred scheme design and commercial approach but not the final detail. Stage 2 will provide this complete level of detail.
- 2.2 Based on the shortlisted potential scheme designs set out in the Strategic Outline Case (SOC), the Outline Business Case (OBC) explored four example scheme designs from the 12 key components that make up a DRS.
- 2.3 The purpose of the four example scheme designs was to stimulate discussion and demonstrate how different system choices made on the scheme for Scotland can influence scheme performance.
- 2.4 The SOC and OBC were published in conjunction with the Scottish Government's public consultation, which ran between June and September 2018. The consultation was based on a series of questions related to the 12 key components.
- 2.5 In addition, ongoing stakeholder engagement and commissioned research projects have contributed to inform the development of the FBC Stage 1.
- 2.6 The Socio-Economic Case will identify the preferred scheme design by considering the seven components set out in Figure 4 below.

Figure 4: Scheme Design and Delivery Route Approach



2.7 The remaining components (Financing, System Ownership, Scheme Regulation, Infrastructure and Logistics, and Realising Additional Benefits) are determinants of the most effective means of delivering the DRS and as such are considered in the Commercial Case.

2.1.1 Additional Evidence Gathering

2.8 Additional evidence has been gathered since the OBC was published to inform the FBC. This includes:

- The public consultation responses.
- The revised Net Present Value (NPV) model.
- A review of international best practice.
- Feedback from a series of stakeholder engagements.

2.9 The public consultation was open between June and September 2018, and 54 questions were posed, of which 39 related to the 12 system components.

2.10 The consultation received 3,215 submissions, which included 1,048 campaign responses organised by campaign group *Have You Got the Bottle*³³. Of the remaining responses, 159 were from organisations and 2,008 from individuals.

2.11 There was widespread agreement amongst both organisational and individual respondents that a well-run and appropriately targeted DRS could provide opportunities in relation to improving the environment, changing people's attitudes to recycling and littering and building the circular economy.

2.12 Respondents identified potential benefits (for employment, small retailers, charities and individuals) and risks (both general and specific) of establishing a DRS in Scotland. They also suggested ways to maximise the opportunities and mitigate the risks.

2.13 The remaining 15 questions were structured around the four example scheme designs, co-operation with the UK Government and the Equality Impact Assessment. The responses to these questions are not considered here as they are outwith the scope of the FBC.

2.14 An independent analysis³⁴ of the consultation responses was completed by Griesbach & Associates and Jennifer Waterton Consultancy. This was published by the Scottish Government on 21st February 2019.

³³ [Have You Got The Bottle](#)

³⁴ [Deposit return scheme consultation: analysis of responses, Scottish Government 2019](#)

2.1.2 The Revised Net Present Value Model

- 2.15 In the OBC, a model was developed to calculate the 25-year NPV for each example scheme design and assess the impact of different design choices on the NPV.
- 2.16 The bespoke model developed for the programme during the OBC drafting has been enhanced. The data inputs have been improved based on additional research and the model itself has been enhanced to ensure that costs and benefits are scaled in a more accurate and consistent manner. For example, if the number of containers in scope is increased or decreased, the costs associated with handling those containers also changes. Additional work includes: a Business and Regulatory Impact Assessment (BRIA), Equalities Impact Assessment (EQIA) and Strategic Environmental Assessment (SEA) – the final BRIA and EQIA documents will be concluded as part of the FBC Stage 2.
- 2.17 Section 2.10 describes the preferred scheme design for Scotland's DRS. A 25-year NPV is provided for the preferred scheme design alongside a Benefit-Cost Ratio (BCR), which summarise the overall value for money of the proposal.

2.1.3 International Best Practice

- 2.18 A number of international schemes have been researched, including visits to eight currently in operation across Europe. Each one operates in different circumstances (e.g. legal and fiscal systems, a number of which have been operating for several years so behaviours and systems are embedded). Therefore, no direct comparators are possible.
- 2.19 This work informed thinking on how different components interact and how the most effective scheme for Scotland could be constructed.

2.1.4 Stakeholder Engagement

- 2.20 For the purpose of the OBC, evidence was gathered from a wide range of stakeholders through interviews, workshops and strategic conversations.
- 2.21 Throughout the programme, engagement and data gathering has covered a wide range of stakeholders including producers, retailers, the hospitality sector, local authorities, private waste management companies, packagers and the logistics and transport sector.
- 2.22 Data input for all actors has been reviewed, reflecting any improved information from this ongoing stakeholder engagement. This has either reinforced existing figures for costs and benefits or resulted in an improvement in projected figures.

2.1.5 Analysis of Components

2.23 Each of the seven components considered in the Socio-Economic Case has been considered based on their contributions to the investment objectives, informed by:

- The consultation responses.
- The NPV model based on the preferred final scheme design.
- International best practice.
- Feedback from a series of stakeholder engagements.

2.24 It should be noted that the impact of components cannot be assessed in isolation. A DRS is a dynamic system where the selection of one component can impact on others. For example, selecting a high performing scheme (80%+) would direct the return location choice towards a “return to the point of purchase” model rather than a dedicated return point, to ensure ease of access for the wider public.

2.25 A DRS with a more extensive scope is expected to be easier for consumers to understand, and will help simplify system communications to the public. A smoother user experience and more regular use is expected to make people more accustomed to a DRS more quickly and more effectively than diverse routes for diverse items. Additionally, the DRS not only encourages recycling directly (via the deposit incentive) but also indirectly, by modelling recycling behaviour in a highly visible way across Scotland.

2.26 This system view has been considered in the component selection and influenced the preference under individual components.

2.1.6 Working Assumptions

2.27 DRS will operate as an instrument for implementing Extended Producer Responsibility, where producers who benefit from placing material onto the market incur the costs of ensuring appropriate treatment at end of life. As such any change in costs and benefits for the Scheme Administrator are reflected in the costs to producers, who are responsible for contributing to the scheme.

2.28 There have been changes in the Scheme Administrator and return point costs and benefits since the OBC. However, where the Scheme Administrator is not running a surplus, these are intended to have a net benefit of zero.

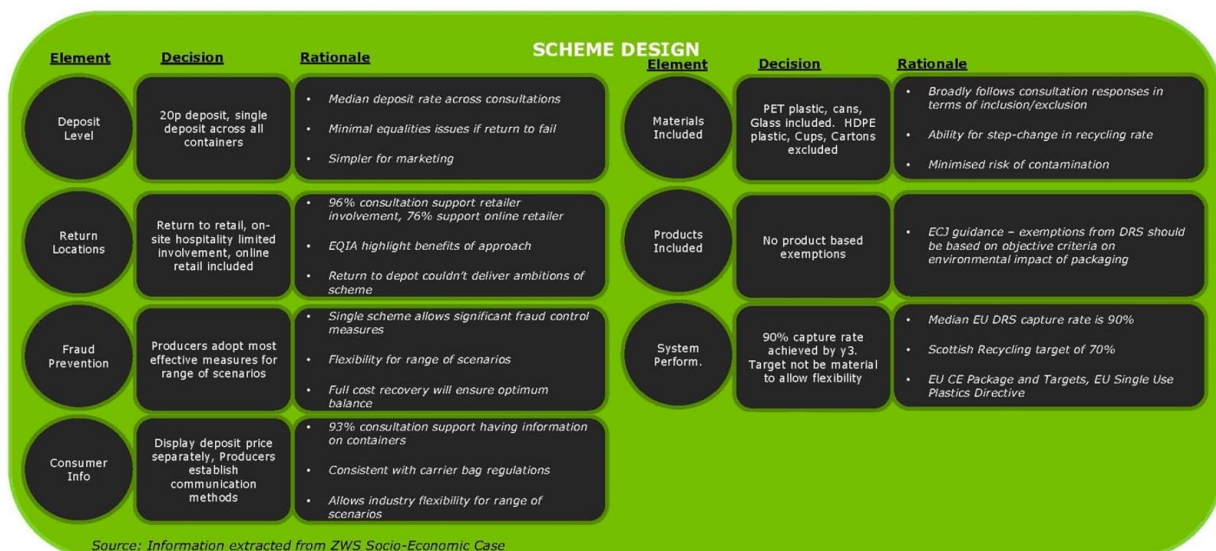
2.29 The Scheme Administrator will fully reimburse return point costs, leading to no overall net benefit or loss during the 25-year NPV period. This cost is incurred from staff time, the value of any lost retail space, miscellaneous supplies and, where an automated solution is used, the cost of maintaining and operating the Reverse Vending Machine (RVM).

2.30 The Scheme Administrator is national in coverage, providing a collection and logistics service for the whole of Scotland. This ensures that remote rural locations are not disadvantaged by incurring costs that would make delivery of the scheme uneconomical. It also provides the necessary control functions to minimise fraud and maximise other potential benefits e.g. ownership of large amounts of materials

2.31 As outlined in the Programme for Government 2017-18, a DRS is being introduced to improve Scotland's recycling rate by including single use beverage containers in scope³⁵.

2.32 A summary of the preferred scheme design is presented in Figure 5 below and a summary of the rationale for the selection of each component follows.

Figure 5: Preferred Scheme Design



2.1.7 Materials in Scope

2.33 Six questions in the public consultation related to materials in scope. The summary responses to each question are set out in Table 2 below:

³⁵ [A nation with ambition: the Government's Programme for Scotland 2017-2018](#)

Table 2: Materials in scope

Number	Question	Summary Results
1	Which of the options do you prefer? Please choose one or more options and explain your reasoning. [PET plastic containers / PET plastic containers and metal cans / PET plastic containers + glass containers + metal cans / PET plastic containers + glass containers + metal cans + HDPE plastic containers / PET plastic containers + glass containers + metal cans + cartons + disposable cups]	Almost half of respondents overall (45%) thought the DRS should include the widest possible range of materials. A further 44% thought the DRS should include all materials except for HDPE (36%) OR cartons and disposable cups (8%). Organisations were much less likely than individuals to favour a highly inclusive scheme: only 21% of organisations favoured the inclusion of the widest possible range of materials, while over half of the organisations (53%) favoured a restriction to PET plastic containers only, PET plastic containers and metal cans only (27%), or PET plastic containers, metal cans and glass containers (9%). There were substantially different views among different organisational groups. For example, food and drink producers, retailers, and recycling / waste management organisations were more likely to favour a more limited set of materials being included in the DRS. By contrast, public sector organisations, charities, community bodies and environmental consultancies were more likely to favour a wider range.
2	Do you think the scheme should start with a core set of materials and then be expanded as appropriate? [Yes / No / Don't know]	Around two-thirds (65%) of respondents overall were in favour of the scheme starting with a core set of materials and then expanding later. Whilst most types of organisation were also broadly in favour of a staged approach, retailers were fairly evenly divided in their views (37% said 'yes' and 47% said 'no'), and food and drink producers and packaging manufacturers disagreed with a staged approach (64% and 75% respectively said 'no').
2a	If yes, which materials should it start with? [PET plastic / Metal (aluminium and steel) / Glass / HDPE plastic / Cartons / Disposable cups]	(i) PET plastic was almost universally selected as belonging to the 'core set' (92%), (ii) a large majority of respondents also selected metal (68%) and glass (61%), and (iii) the least popular material for inclusion in the 'core set' was HDPE plastic which was selected by 30% of respondents.
3	Are there any materials that you think should not be included? [PET plastic	Around a third of all organisations thought that disposable cups and HDPE plastic should not be included in the scheme, and over a quarter

	/ Metal (aluminium and steel) / Glass / HDPE plastic / Cartons / Disposable cups]	thought that glass containers should not be included.
4	Are there any other materials not already listed that should be included?	<p>Among both organisations and individuals, the following materials / items were frequently mentioned for potential inclusion in the scheme:</p> <p>Other plastic items such as detergent and shampoo bottles, plastic cutlery, plastic straws (i.e. not just PET plastic drinks containers), polystyrene, textiles (including clothing, shoes and bags), Tetrapack and other forms of composite packaging (including multi-laminate pouches), batteries.</p>
5	Are you aware of any materials currently in development that should be included?	Bioplastics were highlighted in particular. Both organisations and individuals repeatedly emphasised the importance of clear labelling (some wanted to see statutory labelling requirements) to avoid confusion among members of the public, and the mixing up of materials which should be recycled separately.

Figure 6: Summary of response from individuals and organisations



2.34 A summary of responses from individuals and organisations are shown in Figure 6 above.

2.35 Combined PET plastic, metal and glass account for 83% of the sealed beverage containers placed onto the market. Including these materials will:

- Improve the quantity and quality of materials captured (contributing to investment objectives 1 and 2).
- Have a substantial impact on the volume of litter (contributing to investment objective 3).
- Support the normalisation of behaviour.
- Minimise opportunities for market distortion (switching products between material types to avoid inclusion in the DRS).
- Support the creation of a high performing scheme.

2.36 There is currently no reprocessing capacity for PET in Scotland, therefore all PET collected must be exported. In January 2019, Highland Spring launched a 100% recycled PET (rPET) bottle³⁶ and Coca-Cola European Partners has committed to 50% recycled content of all bottles by 2025³⁷. These are indications of the increase in demand for rPET which will be accelerated by the UK Government's tax on plastic packaging with less than 30% recycled content³⁸.

2.37 The current system of mixing household packaging means achieving food grade recycled plastic on a consistent basis is challenging due to cross contamination. Under DRS, the quantity of PET plastic that would be captured and owned by a single entity³⁹ (the Scheme Administrator) would provide an opportunity for inward investment to create reprocessing capacity for plastic bottles.

2.38 99% of 'metal' drinks containers are aluminium⁴⁰. Recycling 1 tonne of aluminium saves nine carbon tonnes⁴¹ compared to virgin aluminium.

2.39 Aluminium is 100% recyclable and in terms of £/tonne consistently commands the highest value of the materials in scope, a reflection of demand for this material.

2.40 Including aluminium/metal in the DRS will increase the quantity captured from 47%⁴² (contributing to investment objective 1) and reduce litter (contributing to

³⁶ [Highland Spring press release, 18 January 2019](#)

³⁷ [Coca Cola European Partners, Action on Packaging](#)

³⁸ [Single-use plastics: Budget 2018 brief](#)

³⁹ [ZWS modelling based on the composition of household waste at the kerbside in 2014-15 report](#)

⁴⁰ [ZWS modelling based on Kantar data](#)

⁴¹ [Novelis Recycling: Why Recycle Aluminium?](#)

⁴² [ZWS modelling based on Kantar data](#)

investment objective 3). This is based on modelling work comprising Kantar data, waste compositional analysis and expert input from industry.

- 2.41 Considering the case for glass against each of the investment objectives, it is estimated that glass capture rates will increase from the existing 64% level towards 90% (scheme target rate) thereby contributing to investment objective 1.
- 2.42 Regarding investment objective 2, a scheme which prevents glass from breaking in the RVM will promote colour separated glass streams, ensuring that high quality recycled glass is available on the market. This increases the viability of closed loop recycling in Scotland and hence leads to significant energy saving and CO² emissions reductions.
- 2.43 In terms of investment objective 3, glass is estimated to make up 17% of drinks containers in the DRS. As such, it is believed that it will play an important role in normalising behaviour and increasing capture rates. It should also minimise the risk of market distortion by material switching. Including glass will also help reduce litter rates of glass – which has a broader range of litter disamenity impacts compared to aluminium cans and PET.
- 2.44 Including glass offers several economic benefits thereby contributing to investment objective 4. It offers an overall scheme NPV of £705,016,264 compared to £175,419,989 without an additional high-volume high-quality feedstock (1.4megatonnes by 2043) of recycled glass to the Scottish glass industry. It will also benefit society through boosting CO^{2e} emission reductions by 1.3megatonnes over 25 years.
- 2.45 Although there are several strengths associated with including glass in the DRS, it is important to acknowledge the associated weaknesses and threats which will need to be addressed to ensure efficient functioning of the system:
- Most best practice examples that include glass elsewhere differ from the Scottish context and as such it is difficult to accurately predict the extent of public participation in the scheme, at least in the short term. This risk has been mitigated to some extent by other components of scheme design being selected to incentivise participation.
 - Approximately 10% of glass containers (by weight), such as jam jars, will not be included in system. One unintended consequence of this could lead to increasing glass in the residual waste streams. There is the potential to include a fraction of this 10% in the DRS in future and the negative effect is assumed to be marginal relative to the positive effects associated with the predicted increase in recycled glass volume and quality from inclusion.

- 2.46 The size range of containers accepted by the four main RVM manufacturers is above and including 50ml and below and including 3 litres. Adoption of RVMs will improve the efficiency of the scheme by the automated capture of 85-90% of containers in scope, reflecting experience in other EU Schemes. This will be achieved in part through compaction of plastic bottles and metal cans (after being verified as deposit bearing containers) which significantly reduces storage and transport costs. The balance will be collected manually.
- 2.47 A manual collection scheme would substantially increase costs and commissioning RVMs which collect containers below 50ml and above 3 litres would represent an additional commercial and operational risk. Containers below 50ml and above 3 litres represent around 2%⁴³ of overall container numbers. Therefore, it is recommended that the range of containers in scope will be those above 50ml and below 3 litres.
- 2.48 **It is proposed that the materials in scope of Scotland's DRS are PET plastic, metal and glass drinks containers. The range of containers in scope will be those above 50ml and below 3 litres.**

2.2 Basis for Recommended Exclusion

- 2.49 Of the remaining materials that were consulted on and that deliver investment objectives, the following are recommended not to be included at this stage: single-use disposable cups, beverage cartons and HDPE bottles
- 2.50 For all three materials the OBC identified that there were no national schemes that used a primarily automated (RVM) collection approach which included them all. Although multiple manufacturers have assured that this is technically feasible, introducing these as part of a new scheme significantly increases the commercial risk.
- 2.51 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. Therefore, these are considered out of scope of the DRS.
- 2.52 Typically, beverage cartons are reprocessed with single use cups, therefore the materials could be collected together. Removing cups excludes 75% of the containers and 80% of the weight, changing the economics of including cartons.

⁴³ ZWS modelling based on Kantar data

2.53 Cartons only represent 6% of sealed containers and so do not impact the comprehensive nature of the scheme.

2.54 When considering HDPE, the following factors are relevant:

- The consultation indicated lower levels of support (53%) for including this material in the scheme. Concerns primarily centred around perceived hygiene risks. Despite Environmental Health professionals advising that there is no greater risk compared to other materials – and that a well-designed scheme would further mitigate any risk – this perception could adversely impact on participation in the scheme.
- As it is primarily used for dairy products there is limited potential for market distortion by excluding HDPE.
- The dairy category has a significant proportion of the over 3-litre (large milk containers) and sub-50ml (probiotic drink containers) containers which have also been recommended for exclusion.

2.55 There is a possibility that these materials could be considered for inclusion at a later date, expanding a well-established and high performing scheme, especially if some of the technical issues are resolved or additional information and evidence becomes available to reduce commercial risks and reassure participants. Facilitating this future flexibility will be explored in the preferred scheme design.

2.56 It is proposed that the materials out of scope of Scotland's DRS are single-use cups, cartons and HDPE drinks containers. In addition, containers below 50ml and over 3 litres are also recommended for exclusion.

2.3 Products in Scope

2.57 Six questions in the public consultation related to products in scope. The summary responses to each question are set out in Table 3 below:

Table 3: Products in scope

<i>Number</i>	<i>Question</i>	<i>Summary Results</i>
7	Do you think the material the container is made from or the product it contains should be the key consideration for deciding the scope of the scheme? [Material the container is made from / Product it contains / Don't know] Please explain your reasons.	There was no clear consensus among respondents about whether the key consideration should be the material the container is made from (53%) or the product it contains (43%). Organisations were more likely than individuals to prefer a focus on the material the container is made from (68% of organisations compared to 52% of individuals). However, there were large differences between organisational types. Recycling and waste management organisations (100%) packaging

		manufacturers (92%), retailers (88%) and public sector organisations (83%) were strongly in favour of a focus on materials while charities (72%) and DRS companies (50%) favoured a focus on products.
8	Are there any product categories that should be excluded from the scheme? [nine options listed]	<p>The number of individuals who thought any particular product category should be excluded was low. The figure was approximately 1% for soft drinks; 2% for mixers and bottled water; 3% for fruit / vegetable juice and alcohol products; 4% for spirits and other drinks; and 7% for dairy.</p> <p>As far as organisations were concerned, the numbers who favoured exemptions for soft drinks and bottled water were also low (2% of all organisations). However, the proportions favouring exemptions for mixers and fruit / vegetable juice were around 8–9%; for alcohol products 15–16%; and for dairy 34%.</p> <p>There were differences among the various organisation types. Around four in ten public sector organisations, food and drink producers, and packaging manufacturers, five in ten recycling / waste management organisations, and six in ten retailers wanted dairy products to be excluded from a DRS.</p>
9	Are there any product categories that you broadly agree with but think that certain products within them should be excluded? [Yes / No / Don't know] Please give specific reasons for excluding anything.	The most common product identified for exclusion, both by organisations and individuals, was fresh milk. Some respondents explicitly stated that they thought other milk-based drinks (which are often consumed on the go) should be included.
10	Are there any other products that broadly fall into the category of 'drinks' that we have not included that you think should be?	The most common response to this question, both among organisations and individuals, was 'no' or 'none'. In addition, individuals often said 'don't know'.
11	Do you think the DRS should be limited to 'on the go' only? [Yes / No / Don't know] Please explain why.	Respondents were strongly of the view that the DRS should not be limited to 'on the go' only – 88% answered 'no' in response to this question. Individuals were more likely than organisations to answer 'no' (90% compared to 61%). There were substantial differences in the views expressed by different organisational

		types - charities (100%), DRS companies (100%), community bodies (89%) and environmental consultancies (86%) were particularly opposed to the scheme being limited to 'on the go' only, while a majority of respondents from the hospitality and restaurant trade (67%), recycling and waste management organisations (57%), public sector organisations (55%) and retailers (50%) were in favour of an 'on the go' only scheme.
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2.58 European Court of Justice (ECJ) guidance⁴⁴ on DRS and the interaction with the EU single market states that:

“Member states must ensure that there is no discrimination between those products that are exempt and those that are subject to the deposit requirement and that any differentiation is based on objective criteria. Therefore, the Commission is of the opinion that the differentiation should in principle be based on the material used for the containers and not on the content of the beverages, for reasons that the content in itself is not related to the environmental performance of the packaging.”

2.59 Unless there is robust evidence of the impact of a product's inclusion on the environmental impact of the scheme (e.g. it reduced the recycling quality of materials) then no distinction should be made on the basis of product. No evidence of this type of impact has been identified.

2.60 **It is proposed that there should be no differentiation based on product.**

2.4 Return Locations

2.61 Four questions in the public consultation related to return locations. The summary responses to each question are set out in Table 4 below:

Table 4: Return locations

<i>Number</i>	<i>Question</i>	<i>Summary Results</i>
14	Which option for return location do you prefer? Please choose one and explain your reasons. [Take back to a place that sells drinks / Take back to a designated drop-off point / Mixture of take	43% of respondents preferred containers to be taken back to a place that sells drinks and 52% preferred a mixture of take back and drop-off locations. Individuals were more likely than organisations to prefer containers being taken back to a place that sells drinks (45% compared to 25%) and less likely to prefer a mixture of take back and drop-off locations (51% compared to 69%). The views of charities

⁴⁴ [European Court of Justice \(ECJ\) guidance on DRS](#)

	back and designated drop-off]	differed substantially from other organisations. Almost seven in ten charities (68%) preferred a scheme in which containers would be taken back to a place that sells drinks.
15	In any model involving return to retail, are there any types of retailer that should be excluded? [Yes / No / Don't know] Please explain your reasons.	Both individual and organisational respondents were in general agreement that the most important feature of a DRS – and the determining factor in whether it would be successful in achieving the aims of the scheme – was that it should be easy, accessible, simple and convenient for consumers. Respondents thought these qualities were best achieved by a system which allowed exclusions for a few key types of location only.
16	Do you agree that online retailers should be included in the scheme? [Yes / No / Don't know]	A large majority of respondents (76%) agreed that online retailers should be included in the scheme. Less than one in ten (9%) thought that they should not. The remaining 15% said they 'didn't know'. Organisations were slightly more likely than individuals (85% compared to 75%) to agree that online retailers should be included. Hospitality and restaurant trade respondents, recycling and waste management organisations and retailers were slightly less likely than other organisational respondents to think online retailers should be included. However, even for these groups, over two-thirds were in favour of including online retailers.

2.62 96% of respondents favoured retailer involvement in a return to any place of purchase model which includes dedicated return points.

2.63 This would require a mix of manual and automatic return options, depending on the volume of containers and size of retail space. It is anticipated that this will require retailers of all size, by regulation, to act as a return location. However, it would not prevent other types of organisations applying to act as a return point if they desire.

2.64 Existing international schemes with dedicated return points fail to achieve high capture rates e.g. Australian Northern Territories (48%), Newfoundland / Labrador (61.6%), Hawaii (65%).

2.65 Conversely, in Canada, where the model is predominantly return to depot or a hybrid of return to depot/return to retail, there is an average capture rate of 79.3% and Iceland achieves 90%. These higher rates reflect specific geographic factors of

the region, relating primarily to small, concentrated populations of people where return to depot is a more suitable mechanism.

2.66 In line with the public consultation response (76% in favour), it is proposed that online retailers will be required to participate. The inclusion of places of purchase and online retailers was identified as a key design impact by the EQIA. Ensuring groups covered by the protected characteristics had easy and frequent access to redeem their deposits is key to the scheme not creating inequality.

2.67 Hospitality businesses, where containers are sold for consumption on-site, currently retain the vast majority of these containers and then pay for their disposal. Because these containers are highly unlikely to be taken off-site by the customer, it is proposed that such **businesses be given the option not to charge the deposit to customers and need not act as a return point for containers that they do not sell**. However, these businesses will still be expected to return the containers that they sell which are in the scope of the scheme. No handling fee would be paid to these businesses, as they are not incurring any additional costs. These businesses will benefit from the scheme as the containers that they currently pay to dispose of will be collected free under the DRS. Conversely, hospitality businesses that sell drinks containers that may be taken off-site will still be required to charge the deposit to customers and act as a typical return point for any in-scope material. This will apply to hospitality business such as cafes and takeaways.

2.68 **It is proposed that a return to any place of purchase model will be adopted as part of the preferred scheme, with hospitality business being given the option not to charge the deposit to customers and not to act as a return point for containers that they do not sell.**

2.5 System Performance

2.69 There were no questions in the public consultation related to system performance.

2.70 The Scottish Government has a clearly stated aim for the DRS to deliver ambitious impacts.

2.71 A high capture rate will contribute to (i) the Scottish Government's target of achieving a 70% recycling rate by 2025; (ii) the EU Circular Economy packaging targets (which the Scottish Government has committed to adopting); (iii) the EU Single Use Plastic Directive target of recycling 90% of plastic bottles placed onto the market.

- 2.72 A number of DRS in Europe achieve a capture rate of over 90% of containers in scope. The median capture rate for plastic bottles in the scope of these DRS is 90%.
- 2.73 A progressive increase in performance over a three to four year period from scheme introduction has been evident in all new European schemes. This suggests that a three to four year ramp-up period to achieve the target capture rate should be considered to allow time to engage consumers and for system performance enhancements to be developed and implemented.
- 2.74 Setting a capture target against all containers with a variable target for individual material types provides flexibility for the Scheme Administrator to manage capture rates across materials.
- 2.75 **It is proposed that a performance target of capturing 90%** of containers being reached at the end of three years of operation represents an ambitious but achievable performance objective. This is subject to a minimum capture rate of 85% by material type. This should be a statutory target, written into Regulation, for the Scheme Administrator to deliver.
- 2.76 **It is further intended that the performance target will be achieved over the first three years of the DRS operation (e.g. 70% in year 1; 80% in year 2 and 90% in year 3).** This is in line with international best practice.

2.6 Consumer Information

- 2.77 The summary responses to each question in the public consultation related to consumer information are set out in Table 5 below:

Table 5: Consumer information

Number	Question	Summary Results
22	Do you agree that producers should be required to put DRS-related information on each container? [Yes / No / Don't know]	The general consensus among respondents was that producers should be required to put DRS-related information on each container, with 93% overall answering 'yes'. Both organisational and individual respondents favoured this requirement. However, one-quarter (25%) of retailers disagreed with this view and said 'no'.
22a	If yes, should those putting small amounts of material onto the market in Scotland be exempt from this labelling	There was agreement among both individuals and organisations that producers who put small amounts of material onto the Scottish market should not be exempt from this labelling

	requirement? [Yes / No / Don't know]	requirement. Overall, 78% indicated that they were opposed to exemptions.
22c	Rather than be exempt, should small importers be required to put a label with deposit return-related information onto the existing packaging? [Yes / No / Don't know]	There was no clear consensus on this issue. Occasionally, respondents suggested this should be discussed and agreed with producers or piloted.

- 2.78 93% of public consultation responses favoured the inclusion of consumer information on the packaging.
- 2.79 Achieving an ambitious scheme performance target of 90% capture rate of containers is likely to require voluntary identification of containers in scope.
- 2.80 It is important to give industry the ability to adopt efficient and effective measures to achieve the target capture rate e.g. the benefits of requiring a micro-business to incorporate on-pack labelling maybe disproportionate to the cost.
- 2.81 **A combination of the scheme performance target and fraud prevention measures is likely to result in the deployment of on-pack labelling in the majority of circumstances** – where it will support delivery of the investment objectives.

2.7 Fraud Prevention

- 2.82 Two questions in the public consultation related to fraud prevention. The summary responses to each question are set out in Table 6 below:

Table 6: Fraud Prevention

Number	Question	Summary Results
23	Which option for labelling do you believe offers the best balance between reducing potential for fraud and managing costs to producers and retailers? [No changes to current system / Specific barcode / High security label] Please elaborate.	A substantial majority of respondents (72%) thought that adding a specific barcode offered the best balance between reducing potential fraud and managing costs to producers and retailers. 17% favoured no changes to the current system, and the remaining 11% favoured a high security label.

24	Are there other security measures we should be considering, for instance heightened security measures at key return locations? [Yes / No / Don't know]	The most common such suggestion was for a Quick Response (QR) code or embedded Radio Frequency Identification (RFID) chips.
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2.83 72% of public consultation responses favoured adoption of a specific barcode as the main method of fraud prevention.

2.84 The creation of a single Scheme Administrator allows the deployment of a number of fraud control measures. They will have access to all scheme data and the material managed through the scheme, allowing them to quickly identify anomalies and intervene.

2.85 Producers are assumed to be responsible for the full cost of the scheme and as such this will ensure the adoption of the most efficient and effective measures to prevent fraud. This could be different for contrasting sizes of producers e.g. micro businesses compared to those selling hundreds of thousands of containers in Scotland.

2.86 To allow this flexibility **it is proposed that the preferred scheme will not mandate the adoption of a specific barcode.**

2.8 Deposit Level

2.87 Two questions in the public consultation related to deposit level. The summary responses to each question are set out in Table 7 below:

Table 7: Deposit level

Number	Question	Summary Results
25	Do you have a preference for what level the deposit should be set at? [Yes / No / Don't know] Please explain the reasoning behind your choice.	70% of respondents answered 'yes' to indicate that they had a preference regarding the level of the deposit. Organisations were less likely than individuals to say this (58% compared to 71%).
26	Do you think that certain types of drinks containers should carry a different deposit level? [Yes / No / Don't know] Please explain which ones and	Respondents suggested a wide range of deposit levels. However, more than half of all respondents suggested deposit levels of 15-20p (32% suggested 15-20p, 2% suggested 15p and 24% suggested 20p). Organisations were somewhat more likely than individuals to

	why you think the deposit should be varied.	favour lower deposit levels although for both groups the median amount suggested was very similar (15–20p for organisations and 20p for individuals). The overall median deposit suggested was 20p.
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- 2.88 The overall median deposit suggested in the consultation was 20p. This reflects the need for a suitable financial incentive to achieve a 90% capture rate and is within the range of deposit levels used by schemes elsewhere in the world.
- 2.89 The equality impact of a deposit level between 10p and 20p was considered. The existence of easy-to-access return points ensures that maximum deposits are redeemed and minimises the time lapse between deposits being paid and redeemed by enabling frequent return trips.
- 2.90 The EQIA concludes that the exclusion of HDPE (and by extension most milk-based products) can be seen as a positive equality impact, because lower income households spend a higher proportion of their income on what is considered a staple product⁴⁵.
- 2.91 **A standard deposit is proposed across all products**, reflecting expert opinion from other schemes that variable deposits are confusing and can devalue the lower deposit bearing containers in terms of public perception.
- 2.92 **It is proposed that retailers will be required to display the deposit separately from the product price.** This level of transparency for customers makes clear the level of deposit they can expect to redeem from each product at point of purchase. This is consistent with best practice adopted for the Single Use Carrier Bag Charge (Scotland) Regulations 2014, which required the charge to be displayed separately.
- 2.93 **It is recommended that a 20p deposit is applied to all containers in scope.**

2.9 Wider economic and social impacts

- 2.94 As well as broader impacts on material use and disposal, the scheme has the potential to have wider economic and social impacts. Table 8 below demonstrates how these may be realised:

⁴⁵ [ONS, Family Spending in the UK, 2017](#)

Table 8: Additional benefits

Benefit	Opportunities
Demonstrate a net overall positive economic impact (including but not exclusively contributing to a low carbon economy, developing new reprocessing opportunities and generating additional jobs or securing existing jobs).	Work is underway to secure reprocessing opportunities in Scotland through expansion of existing capacity to attract inward investment.
Maximise accessibility to all demographic groups e.g. ensure there is no need to access a private vehicle to redeem deposits.	The work undertaken to identify deposit return sites has been analysed on the basis of ease of return.
Create employment opportunities for groups including the long-term unemployed or those with disabilities.	The location of the counting centre(s) will be considered accessible to an appropriate workforce.
Optimise the positive impacts for small to medium sized businesses including small retailers.	Access to funding of reverse vending machines will be explored in FBC Stage 2. There is also provision for manual collection. The impact on smaller producers is also considered.
Ensure fairness for all demographic groups e.g. considering the impacts of the deposit level on households on lower incomes.	An EQIA has been developed in consultation with relevant interest groups to ensure physical access to the widest range of people and the ability to make frequent returns.
Deliver exemplar circular business practices while still delivering value for money e.g. leasing models for reverse vending machines.	Leasing models will be considered as part of the FBC Stage 2 Business Plan.
Create opportunities to raise funds for charitable causes, where use of the money can have wider societal benefits.	Charitable giving options will be explored as part of the FBC Stage 2.

2.10 Preferred Scheme Design Description

2.10.1 Preferred scheme design – take back to any place of purchase

The preferred scheme design enables you to take your drinks containers back to any retailer that sells drinks in disposable containers.

2.10.2 What the preferred scheme design looks like

2.95 Any retailer that sells drinks in disposable containers (smaller than 3 litres and larger than 50ml) will have to act as a return point, where individuals can redeem the deposit paid on the container when the drink was purchased.

- 2.96 Businesses that sell drinks to be opened and consumed on-site, such as pubs and restaurants, will not have to charge the deposit to the public and will only be required to return the containers they sell on their own premises. Businesses that sell drinks that are more likely to be consumed off-site, such as cafes and takeaways, will still be required to charge the deposit to the public and act as a return point.
- 2.97 Online retailers will be included in the scheme. This means that those customers who are dependent on online delivery, because for a variety of reasons they are unable to travel to shops, are able to easily get back the deposits paid on containers.
- 2.98 Non-retail spaces will be able to act as return locations. These could include recycling centres, schools or other community hubs. The only difference is that retailers will be required by legislation to provide a return service, whereas non-retail spaces will be able to opt in.
- 2.99 Bigger retailers with more space may install machines to both collect the bottles and cans and enable people to return deposits. Smaller retailers with less space have the option to return deposits over the counter, collecting the containers manually.
- 2.100 The scheme will include plastic bottles made from PET (the most common type of bottle for products such as fizzy drinks and bottled water), aluminium and steel cans and glass bottles.
- 2.101 Schemes run on similar principles in places such as Scandinavia and the Baltic states capture up to 95% of eligible drinks containers for recycling. Scotland's DRS will target a return rate of 90%. This is almost double the current capture rates for the materials that are in scope. Having a deposit level which provides a sufficient incentive to return containers, together with provision of high coverage of return points, means that this target is ambitious but achievable. It is recommended that this target be written into legislation for the Scheme Administrator to deliver.
- 2.102 It is important to note that the true national recycling rate for the containers targeted through Scotland's DRS will be slightly higher than the scheme capture rate itself. This is because some items not returned will continue to be returned through existing recycling facilities such as kerbside.

2.10.3 The impacts of the preferred design scheme

2.103 This preferred scheme design offers a high return rate for containers in scope. As such it most closely matches the environmental ambitions which underpin the policy: increasing the recycling rate and reducing littering.

2.104 The preferred scheme design offers flexibility for consumers and the opportunity to maximise the capture rate, by adopting return to any place of purchase, including online retailers. This means that return locations will be located in the same places where individuals are purchasing the containers, ensuring ease of access for consumers, regardless of where they live.

2.105 The preferred deposit level is 20p. This is within the current range adopted by successful international schemes, before consideration of the devaluation of the deposit over time. It is the median deposit level suggested by responses to the public consultation.

2.106 The impact of the deposit on equality groups was explored in the EQIA. There is little perceived difference in the impact between either a 10p or 20p deposit, assuming that convenience of the scheme allows individuals and households to redeem deposits frequently and easily.

2.107 The design of the scheme reflects the OBC's conclusion that the implementation of a DRS should create an organisation that is proportionate to the Scottish landscape. Such schemes have been successfully implemented in a range of market sizes (smaller, comparable and larger than Scotland) and frequently including PET plastic bottles, metal cans and glass bottles.

2.108 There are no examples of a national scheme, which predominantly uses Reverse Vending Machines (RVMs) for returns, that accept HDPE, single-use cups or beverage cartons. Although the position of RVM manufacturers is that including these materials is technically feasible, the incorporation of these materials from launch substantially increases the commercial risk to the scheme.

2.109 As part of the 2019-20 Scottish Budget, the Scottish Government signalled its agreement in principle to the use of charging in relation to disposable drinks cups. We will consider the recommendations of the Expert Panel on Environmental Charging and other Measures – which are due later this year – and bring forward proposals in 2019-20 for legislation and other measures to implement the Panel's recommendations. Any measures taken could substantially influence the number of containers placed onto the market and, therefore, the costs and benefits from including these in Scotland's DRS.

- 2.110 The exclusion of single use cups has an impact on the costs and benefits of including beverage cartons, as these containers have the same end reprocessing destination and so could be collected together at return locations. Excluding cups removes almost 75% of the tonnage and almost 80% of the containers from this stream.
- 2.111 Feedback from the Scottish Government’s public consultation supported starting with a “core set” of materials at the launch, with 65% of responses (57% of organisations and 66% of individuals) agreeing that this was a good idea to maximise the potential for success.
- 2.112 The consultation also demonstrated strong support for all materials initially proposed for inclusion eventually coming within the scope of the scheme, with HDPE having the lowest level of support. Just over half, or 53%, of responses favoured its inclusion. The concerns raised about HDPE were linked to hygiene and its use as packaging for dairy products. This was particularly strong feedback from retailers and hospitality premises, which could impact on ‘buy-in’ to the scheme from these providers of return points, if this material was to be included.
- 2.113 The preferred scheme design builds in flexibility for the future, so that there is the possibility for wider materials discussed in this document to be added at a future date. Future additions could be based, for example, on recommendations from the Expert Panel and wider expertise, as well as the adoption of measures that address stakeholder perceptions of hygiene risk, and further evidence of the robustness of the scheme in accepting a new range of containers.

Table 9: Presentation of Preferred Scheme Design: Net Present Value (NPV) and Benefits-Cost Ratio (BCR)

Actor	PREFERRED SCHEME DESIGN: 25 YEAR NPV (£) ⁴⁶			
	Costs (£m)	Benefits (£m)	Net benefit (£m)	
Scheme Administrator	(£1,273-£1,795)	£1,521-£2,043	£248	All of the costs falling to the DRS Scheme Administrator including logistics, counting infrastructure, staff and reimbursing return points via the handling fee. Benefits are the income streams (unredeemed deposits, material sale, producer fee). It is assumed income will broadly equal expenditure. The net benefit is a result of unredeemed deposits in years 1-5 being reserved until sufficient evidence has been accumulated to allow these to be treated as a revenue stream by the Scheme Administrator.

⁴⁶ Brackets around NPV figures indicate a negative value, i.e. these are costs.

Return Points	(£887-£1,251)	£887-£1,251	£0	All costs associated with operating a return point under return to any place of purchase (staff, value of space, purchase of RVMs or other appropriate containerisation and utility costs) reimbursed via handling fee.
Producers	(£669-£1,233)	£623	(£46-£610)	Upfront costs associated with the introduction of a market specific barcode, ongoing costs associated with having to operate these additional Stock Keeping Units (increased changeovers, impact on logistics and increased stockholding) and the cost of producer fee (to cover any shortfall in finances for the Scheme Administrator). The benefits to producers are the avoided compliance costs of not contributing towards an amended Extended Producer Responsibility scheme to deliver the EU Circular Economy Package targets.
Local Authorities	(£46)	£237	£191	Costs relate to a reduction in income or increased costs associated with sorting the remaining materials left in the kerbside collections. The benefits to local authorities are collection efficiencies for both bin collections and litter collections, and reduced costs for disposal of materials.
Commercial Premises	£0	£35	£35	Business premises who are currently paying for the collection and disposal of material would save on this, as the Scheme Administrator would provide this collection free of charge.
Other Sectors	(£137)	£135	(£2)	<u>Private waste management companies</u> : Income generation from service provision is reduced resulting in a reduction in profit. Benefit relates to increased availability of resource. <u>RVM servicing providers</u> : Cost of providing the service and income from charging businesses for doing so (i.e. small benefit relating to profit associated with activity). <u>Regulators</u> : Cost of staff time for enforcing new scheme.
Public	(£822)	£1,101	£279	Costs include individuals not claiming back their 20p deposits on containers (10% of containers over 25 years) and placing a financial value on the public time associated with returning containers to have the deposit redeemed. This is £10m per year. The benefits are avoided disamenity from reduced litter in towns and neighbourhoods, based on the large reduction in volume by removing a significant amount of drinks containers from the litter stream. Carbon benefits – value of carbon reduction both

				under the Emissions Trading System (ETS) scheme and non-ETS eligible carbon savings.
TOTAL	(£3,834-£5,284)	£4,539-£5,425	£705-£141	

The preferred scheme design has a total net benefit of £705 million over the 25-year Net Present Value (NPV).

2.11 NPV Analysis

2.114 The key components of the NPV are described below, indicating the main costs and benefits associated with each actor including the assumptions that have supported the development of these. For many of the actors, a range of costs are presented because adjustments have been made for optimism bias. It is expected that the level of optimism bias adjustment required will reduce substantially as part of the FBC Stage 2 process, as set out more fully below.

2.115 In relation to optimism basis, the HM Treasury Green Book Guidance states that:

“Project appraisers have the tendency to be over-optimistic. Explicit adjustments should therefore be made to the estimates of a project’s costs, benefits and duration, which should be based on data from past or similar projects, and adjusted for the unique characteristics of the project in hand.

“This guidance provides cost and time uplift percentages for generic project categories which should be used in the absence of more robust primary data.”

2.116 HM Treasury suggested initial optimism bias uplifts for a range of project types are detailed in Table 10:

Table 10: Optimism Bias Recommended Adjustment Ranges⁴⁷

Project Type	Optimism Bias			
	Works Duration		Capital Expenditure	
	Upper	Lower	Upper	Lower
Standard Buildings	4	1	24	2
Non-Standard Buildings	39	2	51	4
Standard Civil Engineering	20	1	44	3
Non-Standard Civil Engineering	25	3	66	6
Equipment/Development	54	10	200	10
Outsourcing	n/a	n/a	41*	0*
*the optimism bias for outsourcing projects is measured for operating expenditure.				

2.117 The most similar category for the purposes of this project is the outsourcing category that is described as “concerned with the provision of hard and soft

⁴⁷ [Supplementary Green Book Guidance – Optimism Bias](#)

facilities management services – for example, information and communication technology services, facilities management and maintenance projects”.

2.118 Accordingly, an optimism bias of 41% has been applied to the capital and operating costs of providing and running the scheme in the preferred scheme design. This impacts on the Scheme Administrator costs, return point costs and the producer costs.

2.119 As part of the Green Book approach, the adjustment required for optimism bias is expected to reduce as a project moves through the appraisal process, because the level of uncertainty in the appraisal is reduced through refinement of costings and consultation with stakeholders. In this case, the percentage applied to optimism bias has not been reduced since the OBC. This is a conservative approach to calculating the NPV, as further work has been undertaken to update or reinforce the scheme costs.

2.120 These updated estimates are however still pre-market, i.e. the figures are not the outcome of a competitive tendering exercise. It was therefore considered prudent to continue to exercise caution until these could be tested in this manner.

2.121 It is expected that the optimism bias will be reduced as part of the FBC Stage 2 process, which requires a greater level of commercial planning for the Scheme Administrator. A lower adjustment for optimism bias would result in smaller ranges of costs.

2.11.1 Scheme Administrator

2.122 As identified in the working assumptions section, the Scheme Administrator is an organisation incorporated to deliver a DRS at a national level. The income it receives should cover all of the operating costs i.e. the net benefit should be zero.

2.123 The total costs of delivery of the scheme over 25 years is £1,273-£1,795 million and the total benefit is £1,521-2,043 million. The net benefit is £248 million, as a result of unredeemed deposits in years 1-5 being reserved until sufficient evidence has been accumulated to allow these to be treated as a revenue stream by the Scheme Administrator. No assumptions are made about how this accumulated balance is then distributed.

2.124 The main costs incurred by the Scheme Administrator are the handling fee paid to retailers (70%), costs of collection logistics (16%), staff and infrastructure costs associated with counting centres and scheme administration (8%) and fraud (6%).

2.125 The range of figures associated with these costs are shown in Table 11:

Table 11: Scheme Administrator costs

Scheme Administrator Tasks	Cost Range
Handling Fee to Retailers	(£887-£1,251 million)
Cost of Collection Logistics	(£209-£295 million)
Staff and Infrastructure Costs	(£103-£145 million)
Fraud	(£74-£104 million)
Total	(£1,273-£1,795 million)

2.126 The main income streams for the Scheme Administrator are unredeemed deposits (between 43% and 32%), revenue from the sale of materials (between 20% and 15%) and a producer fee (between 37% and 53%). As identified in the working assumptions, DRS is a form of producer responsibility, where producers who benefit from placing material onto the market incur the costs of ensuring appropriate treatment at end of life.

2.127 The revenue received by utilising unredeemed deposits assumes that the 90% capture rate of containers is achieved by year 3 of the scheme operating and is maintained for the remainder of the 25 years.

2.128 The range of figures associated with these benefits are shown in Table 12:

Table 12: Scheme Administrator benefits

Scheme Administrator Benefit	Cost Range
Unredeemed deposits	£657 million
Revenue from material sales (selling individual materials collected for recycling)	£297 million
Producer Fee (producer financial contribution to scheme costs)	£567-£1,089 million
Total	£1,521-£2,043 million

Return Points

- 2.129 As identified in the working assumptions section, businesses operating as a return point should be fully reimbursed for their costs, leading to no overall net economic benefit or loss during the 25-year NPV period.
- 2.130 The total cost to return points of facilitating returns over 25 years is £887-£1,251 million and the total benefit is £887-£1,251 million. The net benefit is therefore zero.
- 2.131 There are 17,407 return points identified under a return to any place of purchase model in Scotland. This covers all types of premises that sell drinks containers to the public including large shops, small shops, bars, restaurants, cafes etc.
- 2.132 This includes a mix of automatic return, where the return is facilitated by using an RVM, and manual, where the return is facilitated by a member of staff. There are around 3,000 automatic return points, with various configurations and sizes of RVMs, and 14,386 manual return points.
- 2.133 For automatic return points the main costs accounted for are the purchase of the RVM, the value of space within the business occupied by the RVM, staff time to service the machine and consumables such as insurance, electricity and servicing costs.
- 2.134 For manual return points the main costs are staff time, the value of space within the business occupied by bags and consumables such as suitable bags and tags with barcodes to link the bag back to a specific business.
- 2.135 For hospitality premises that are exempt from charging the deposit to customers and acting as a return point for containers that they do not sell, they are only reimbursed for consumables. This is because they are handling and storing containers that they already manage.
- 2.136 Costs are reimbursed to return points on a per container basis via a handling fee paid by the Scheme Administrator. This handling fee should cover any costs incurred and therefore there are different handling fees for automatic and manual return points.
- 2.137 The division of containers between these return point configurations is 85% automatic and 15% manual, mirroring behaviour in other similar schemes across Europe.
- 2.138 This results in the following return profile (Table 13):

Table 13: Return profile

Return Point Type	Automatic	Manual
No of containers per year	994 million – 1318 million	175 million- 233 million
Costs	£769 - £1,084 million	£118-£167 million
Benefit	£769-£1,084 million	£118-£167 million

2.11.2 Producers

2.139 Under a DRS, producers are those companies that put deposit bearing products onto the market (a further definition is provided in the Commercial Case (page 79). DRS is a form of producer responsibility and, as such, producers are responsible for contributing to the scheme where the operating costs of the scheme exceed revenue generated from unredeemed deposits and the sales of material.

2.140 The total cost to Producers from implementation of the scheme over 25 years is £669-£1,233 million and the total benefit is £623million. The net cost is therefore £46-610 million.

2.141 The main costs incurred by producers are set-up costs for establishing a separate label for the Scottish market (between 5% and 7%), increased inefficiencies in production, logistics and storage due to creation of a new market (between 6% and 8%) and the producer fee to the Scheme Administrator (between 85 and 88%).

2.142 The range of figures associated with these costs are (Table 14):

Table 14: Producer costs

Producer Costs	Cost Range
Set-up costs for establishing separate labels	£46-£65 million
Ongoing costs associated with creation of two labels for UK market	£56-£79 million
Producer Fee	£567-£1,089 million
Total	£669-£1,233 million

2.143 Reserving unredeemed deposits in years 1-5 results in a higher producer fee contribution of 30-77% to cover the scheme costs. No assumptions are made about how this accumulated balance is then distributed. However, it is clear that

providing the necessary evidence to allow access to this revenue stream would dramatically reduce producer costs.

2.144 The Scottish and UK Governments have both committed to adopting the EU Circular Economy package. This package introduces new recycling targets for packaging materials, extended to 2030, and the concept of 100% cost recovery in Extended Producer Responsibility schemes.

2.145 The benefit to producers involved in DRS is the avoided compliance costs that they would therefore be required to pay, associated with the implementation of the Circular Economy package, and to deliver the same outcomes against the four stated investment objectives. This benefit is £623 million over the 25 years.

2.11.3 Local Authorities

2.146 The total costs to Local Authorities over 25 years is £46 million and the total benefit is £237 million. The net benefit is therefore £191 million.

2.147 Local Authorities are not directly involved in the scheme however they are currently managing a significant proportion of the material that will be diverted to a DRS. It is the transfer of material which is responsible for these costs and benefits.

2.148 All of the costs, £46m over the 25 years, are based on increased sorting costs for the remaining dry recyclate and the lost income from selling materials. This is based on the assumption that MRF would maintain the profit per tonne of material i.e. that the lost value of material would be added to sorting costs.

2.149 The main benefits for Local Authorities are £133m in residual disposal cost savings (56%), £27m in savings from handling less dry recyclate (11%), £59m in freeing resources currently used to collect these materials (25%) and £18m from reductions in litter collection and disposal costs (8%).

2.150 The figures associated with these benefits are (Table 15):

Table 15: Local Authority benefits

Local Authority Benefits	NPV Benefit over 25 years
Residual Disposal Savings	£133 million
Savings from managing less tonnage of dry recyclate	£27 million
Resources currently used to collect these materials	£59 million
Reductions in litter collection and disposal costs	£18 million
Total	£237 million

2.11.4 Commercial Premises

- 2.151 There are no costs to commercial premises over 25 years and £35 million in benefits. The net benefit is therefore £35 million.
- 2.152 These savings all arise from savings in commercial waste management collections. Organisations who are currently paying to have waste collected are able to reduce collection frequency, bin size or have the material collected by the Scheme Administrator to save money.
- 2.153 Over 80% of these savings come from recycling collections, where material is concentrated enough to allow one of the scenarios above to occur. This will primarily impact hospitality type premises such as pubs and restaurants.

2.11.5 Other Sectors

- 2.154 There are 3 actors (commercial waste management, RVM service providers and regulators) who are considered in this category, as the overall impact on the net benefit is minimal. The total costs associated with these actors is £137 million over 25 years and the total benefit is £135 million. The net cost is therefore £2 million.
- 2.155 Commercial waste management operator costs over 25 years are £35 million and the benefits are £34 million, resulting in a net cost of £1 million. The costs relate directly to the reduced collections identified under Commercial Premises i.e. these organisations will lose this income. The cost benefits portrayed are the resources, staff and infrastructure currently dedicated to these services which will be freed to be utilised for other opportunities.
- 2.156 RVM service providers costs over 25 years are £98 million and the benefits are £101 million, resulting in a net benefit of £3 million. The costs are the resources that these companies invest to service the RVMs across around 3,000 automatic return points across the country. The benefits are the income received from charging these return points for servicing and maintenance.
- 2.157 Regulator costs over 25 years are £5 million and there are no benefits, resulting in a net cost of £5 million. The costs are staff and overhead costs associated with ensuring compliance across all actors involved in DRS. These costs primarily fall to SEPA (£4 million), with the remaining £1 million covering activity delivered by other regulators such as Local Authorities and Fire and Police Services.

2.11.6 Public

- 2.158 The total cost of the scheme to the public over 25 years is £822 million and the total benefit is £1,101 million. The net benefit is therefore £279 million.

- 2.159 The two costs incurred by the public are unredeemed deposits (80%), where individuals chose not to redeem 10% of the containers where a deposit was paid, and the value of public time (20%), which is based on a consistent figure adopted for the OBC of £10m per year. The preferred scheme design is a return to retail model with return points at all points of sale, and it is therefore assumed that almost all returns will be part of existing shopping trips.
- 2.160 The three main benefits to society are through improved amenity resulting from a reduction in a highly visible component of the litter stream (90%), a reduction in carbon emissions (7%) and the value of commercial advertising space at RVMs (3%).
- 2.161 Commercial advertising space has been allocated to society due to uncertainty about who would benefit financially from this. Practically this is likely to be either the Scheme Administrator or Return Points. The value of carbon is based on BEIS carbon values published before the 2018 Intergovernmental Panel on Climate Change (IPCC) report on Global Warming of 1.5 degrees, so is likely to be undervaluing the carbon impacts.
- 2.162 The figures associated with these costs and benefits are (Table 16):

Table 16: Impact on the public

Impact on Public	Costs	Benefits
Unredeemed deposits	£657 million	N/A
Value of public time	£165 million	N/A
Improved amenity resulting from the reduction in litter	N/A	£994 million
Monetised benefit from carbon emission reduction	N/A	£81 million
Commercial value of advertising space at RVMs	N/A	£26 million
Total	£822 million	£1,101 million

2.11.7 Summary

- 2.163 As the above breakdown demonstrates, most actors either benefit or have zero impact from the introduction of a DRS for Scotland.
- 2.164 Society, including individuals and organisations, benefit the most from the introduction of a DRS, primarily because of improved amenity from the reduction in litter and the carbon benefits from recycling more materials. This more than offsets the time required for the public to participate and the value of unredeemed deposits, resulting in a net benefit of £279 million.

- 2.165 Local Authorities and commercial premises also have a net benefit, as a result of the DRS collecting and managing waste that they are currently paying for themselves. This results in a net benefit of £191 million and £35 million respectively.
- 2.166 The Scheme Administrator in a standard operational period has a net impact of zero, as the costs of operating the scheme are recovered from unredeemed deposits, revenue from sale of materials and a fee charged to producers. There is a net benefit of £248m due to the unredeemed deposits in years 1-5 and no assumptions being made about how this would be utilised.
- 2.167 Return Points have a net impact of zero, as all of the costs of collecting and managing containers are reimbursed by the Scheme Administrator.
- 2.168 Producers will have to contribute more to a DRS, when compared to present circumstances. However, this is not an accurate baseline for the next 25 years, as the Scottish Government has committed to the introduction of the EU Circular Economy package including new packaging targets and 100% cost recovery in Extended Producer Responsibility schemes.
- 2.169 The net cost for producers therefore is between £46 million and £610 million, where the full 41% optimism bias is applied to the capital and operating costs of providing and running the scheme. This could be significantly reduced if the necessary evidence could be provided to allow access to year 1-5 unredeemed deposits.
- 2.170 Other actors identified have minimal impact across the 25-year NPV, with commercial waste operators (£1 million) and Regulators (£5 million) having a negative impact and RVM Service Providers (£3 million) having a positive net benefit.
- 2.171 The total cost across all actors for the 25-year NPV is between £3,834 and £5,284 million. The total benefit across all actors for the 25-year NPV is between £4,539 million and £5,425 million. The 25-Year NPV is £705 million. With full 41% optimism bias applied there is still a positive NPV of £141 million.
- 2.172 A Benefit-Cost Ratio (BCR) has also been calculated by dividing the total net present benefits by the total net present costs. A BCR greater than one demonstrates that the benefits are greater than the costs and therefore represents value for money. The BCR of the preferred scheme design is 1.20. Applying optimism bias the BCR is 1.03.

2.11.8 Sensitivity of costs to other factors

Possible impacts on NPV of changes to cost/benefit estimates already included in the model

2.173 For figures included currently within the NPV, there are a limited number of factors that are both significant enough to influence the overall NPV and have a large enough range of potential values.

2.174 As a way of assessing the sensitivity of the costs to these factors, an analysis has been conducted to look at the percentage changes required to result in a negative NPV for the preferred scheme design.

2.175 Table 17 below summarises this information:

Table 17: Percentage change required to result in Negative NPV

	% change required in Scheme Administrator Costs (excluding handling fee)	% change required in Return Point Costs	% change required in Avoided Compliance Costs	% change required in value of public contribution	% change in value of Society Benefits
Preferred Scheme Design	183%	79%	-113%	427%	-64%

2.176 The minimum percentage change required across any of these factors is 65%, indicating that in most instances costs would have to almost double or benefits be reduced by over two-thirds before it results in a negative NPV.

2.177 This result confirms that avoided compliance costs and the society benefits, driven by a reduction in litter, are of equivalent or greater value than all Scheme Administrator and return point costs combined.

2.178 This includes staff costs, infrastructure, fraud, costs associated with return points etc. In addition, confidence on the certainty of these scheme costs, which can in many cases be benchmarked against overseas systems, is much greater.

3 COMMERCIAL CASE

Commercial Case key messages

The key findings from the Commercial Case of the Full Business Case (FBC) are summarised below.

Four potential delivery models have been identified and considered for the Scheme Administrator:

- **Option 1A** – 100% Public sector ownership of non-profit Scheme Administrator. RVMs, Counting and Bulking centres procured by the public sector. Logistics outsourced. Public sector borrowing to fund upfront capital investment.
- **Option 1B** – As per Option 1A with the exception of RVMs which will be procured by Retailers who will be reimbursed by the Scheme Administrator through the Handling Fee.
- **Option 2** – 100% Privately owned non-profit Scheme Administrator. Counting and Bulking centres procured by the Scheme Administrator. Logistics outsourced. RVMs procured by Retailers and reimbursed by the Scheme Administrator through the Handling Fee, and
- **Option 3** – Public (20%): Private (80%) non-profit joint venture. Counting and Bulking centres procured by the Scheme Administrator. Logistics outsourced. RVMs procured by Retailers and reimbursed by the Scheme Administrator through the Handling Fee.

The analysis in this section concludes that Option 2 – a privately-owned non-profit Scheme Administrator - has the benefit of being the most common route adopted in recent international Deposit Return Schemes (DRS) and having a track record of minimising costs and achieving high rates of recycling. Specifically, this model:

- Ensures operational and financial risk exposure sits with Producers in line with Extended Producer Responsibility. A producer, for the purposes of DRS, is defined as the brand owner, resulting in a single point of responsibility within the supply chain.
- Has recent precedent, with a number of European, privately operated, non-profit schemes functioning effectively.

- Maximises scope for buy in from the private sector, with producers and retailers indicating through consultation that, should the scheme proceed, they would want to operate it and therefore as owners they will be more incentivised to perform.
- Requires public sector monitoring of performance through regulation rather than direct control.

A public sector Scheme Administrator would:

- Offer greater public sector control of the Scheme than would be available through a private sector solution, potentially realising the additional benefits identified in Section 3.6.2 to a greater degree than the private sector options.
- Require less sophisticated regulation, given the direct control of the Scottish Government.
- Be more aligned to the feedback received from the public via the public consultation that the preferred ownership model was involving the public sector, securing greater confidence in the scheme.
- Be likely to have a budgetary implication for the Scottish Government, including capital budgets during the establishment of the Scheme and on-going capital and revenue budget implications for the Scottish Government.

On balance, this FBC concludes that a 100% private sector non-profit solution is preferred. Further work remains (see Section 3.7) to determine the basis of procurement of a private sector Scheme Administrator, the detail of the regulatory regime to be applied and the detailed governance arrangements relating to the Scheme Administrator.

3.1 Introduction

- 3.0 This Commercial Case encompasses analysis of the ownership structure, funding solution and contractual arrangements required to deliver a successful Deposit Return Scheme (DRS) in Scotland.

3.2 Scope and Services

- 3.1 The scope of the services required by the Scheme Administrator is summarised below:

- Management of the inflows and outflows of the Scheme (including Deposits, Producer fees, Handling fees, income from sale of materials etc.).
- Management of performance of the scheme to ensure targets are achieved.
- Construction and commissioning of counting and bulking centres and the provision of IT infrastructure.
- Operation and maintenance of the centres for the life of the facility (or until such time as it is disposed of by the Scheme Administrator). The services will include:
 - Life cycle replacement.
 - Hard facilities management (building equipment and fabric maintenance, major equipment replacement and repairs).
- Logistics service contract for the collection of materials from retailers to the counting centres.
- Sale of materials – contract for sale of materials to re-processor.

- 3.2 It will be for the Scheme Administrator to formally determine which of these services are delivered in-house or contracted out at a later date, on the basis of the services required and the supplier market at that time.

- 3.3 Across all of these services, there will be the opportunity for local job creation, training and upskilling for local residents. Scheduling focussed 'Meet the Supplier' events within the procurement timetable can help maximise inclusive growth opportunities.

3.3 Contractual and Personnel Implications

3.3.1 Overview

- 3.4 Contractual and personnel implications will be directly influenced by the choice of delivery model. A public sector model will be required to follow public sector procurement regulations requiring a greater level of preparatory work, compared to a private sector one, where no direct contract exists between the public and private sector. Under a private sector arrangement, there would be a greater onus on the Scottish Government to provide oversight through the regulatory regime and to ensure robust non-contractual monitoring arrangements are put in place including, for example, regular progress reports to key stakeholders etc.

3.3.2 Key people related issues within the DRS Programme

- 3.5 While people-related issues will be influenced by the ultimate choice of delivery model, there are key shared issues across all models which are summarised below:

- *Vision and Organisational Definition.* Critical decisions need to be taken on the vision, objectives, structure and timing of implementation of a DRS.
 - *Leadership.* An interim leadership team for a DRS needs to be assigned, to provide direction and ensure clear accountability for decisions.
 - *Clarity/communication.* There needs to be regular and clear communication with the staff impacted by the project.
 - *Employee Relations.* Employee relations implications could arise, specifically comprising of the appointment or transfer of employees to the Scheme Administrator and a new location, as well as the harmonisation of terms and conditions.
- 3.6 The need for a robust line of communications would be prioritised to ensure that any impacted staff are regularly and accurately briefed.

3.3.3 Transition Management Actions

- 3.7 To ensure critical decisions are taken, a detailed Transfer Plan will be developed by the programme, which will cover staff transfer issues (if relevant) and also consider the transfer of any data, contracts, processes and business knowledge, from the business planning phase into the implementation phase. This will ensure that all legal considerations and implications are addressed as decisions are taken. The key actions that will be taken in consultation with key stakeholders are:
- Identification of roles and responsibilities to own and manage transition activities.
 - Appointment of legal advisors to provide input into key employee relations questions.
 - Identification of any transferring contracts, asset and data.
 - Development of a clear transition plan: outlining all the key milestones and time considerations.

3.4 Consultation Responses

- 3.8 This Commercial Case has been informed by consultation carried out by the Scottish Government and summarised below:
- 3.9 Consultation Feedback - Scheme Ownership (see Table 18)
- 3.10 The ownership of the Scheme Administrator was included as a question within the public consultation. The consultation did not provide a clear consensus on the ownership question, with a roughly equal split of views between privately owned and publicly owned schemes.
- 3.11 Where a joint ownership model was proposed, the majority of respondents suggested the public sector would take an oversight/governance role, while the private sector would be responsible for operational delivery.

Table 18: Public Consultation – Ownership

Number	Question	Summary Results
32	<i>Which option do you think offers the best ownership model?</i>	<p><i>There is no clear consensus on the correct approach with 45% of organisations favouring a private not-for-profit scheme and 46% of individuals favouring a public scheme. Food and drink (77%), retailers (59%) and hospitality (80%) were the most likely organisations to favour a not-for-profit private scheme.</i></p> <p><i>Where a combination of public and private ownership was proposed, the public sector was primarily envisaged as adopting an oversight or governance role – setting the framework for the scheme and providing scrutiny and accountability. The value in industry having responsibility for operational delivery was identified by these responses.</i></p>

Source: Scottish Government analysis

3.12 Consultation Feedback – Regulation (see Table 19).

3.13 Regulatory oversight was a consideration of the public consultation. The main respondents indicated that the Scottish Government should be taking a role in regulating the Scheme Administrator and the majority of these respondents favoured the use of an existing regulator as opposed to a new body.

Table 19: Public Consultation – Regulatory Questions and Summary Results

Number	Question	Summary Results
35	<i>Which option for regulating producers do you think is most appropriate?</i>	<i>67% (including 54% of organisations and 68% of individuals) support regulation by an existing body. 34% of organisations (including 61% food and drink producers, 70% of charities and 60% hospitality) think this should be the responsibility of the scheme administrator.</i>
36	<i>Who should be responsible for regulating return locations?</i>	<i>67% (including 54% of organisations and 68% of individuals) support the use of an existing body.</i>
37	<i>What regulatory powers should the Scheme Administrator have?</i>	<i>Individual responses stated that there should be sufficient or adequate regulatory powers to deliver a successful scheme. Organisations responded in more detail, with a requirement that punitive measures should be set out in statute and there should be a high level of autonomy to work within a framework set by the Scottish Government.</i>
38	<i>Should the Scheme Administrator have a role in product approval?</i>	<p><i>69% (59% of organisations and 70% of individuals) responded yes.</i></p> <p><i>Retailers (59%) hospitality, community bodies and packaging manufacturers (40%) were the most likely organisational types to say no.</i></p>
39	<i>Should the Scottish Government have a role in regulating the Scheme Administrator and if so how should it be delivered?</i>	<p><i>89% of responses (90% of organisations and 89% of individuals) agreed that this is a role for Scottish Government.</i></p> <p><i>The question was then asked if this should be delivered via SEPA. Organisations responses were 40% yes, 24% no and 36% don't know; individual responses were 56% yes, 9% no and 34% don't know.</i></p>

Source: Scottish Government

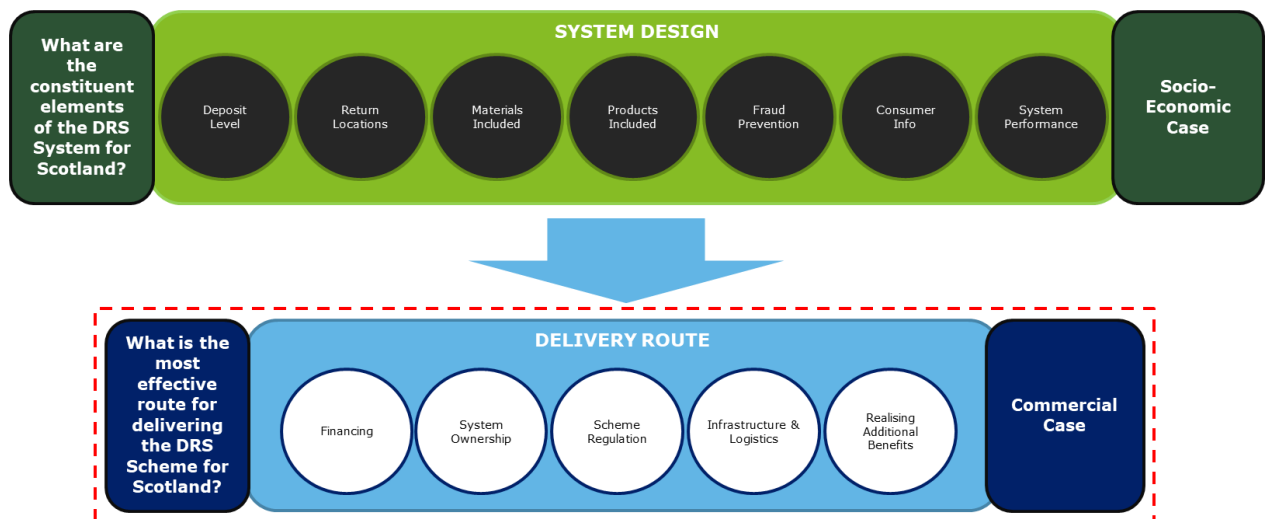
3.14 The consultation responses have been considered in evaluating the delivery options described in this Full Business Case (FBC).

3.5 Delivery Model

3.5.1 Introduction

3.15 Work carried out as part of the Socio-Economic Case has identified the preferred scheme design, as summarised in the first part of Figure 7 below. The Commercial Case now seeks to identify a preferred delivery route, aligning to this design and factoring in the key levers of scheme ownership, scheme regulation, infrastructure, logistics/financing and realising additional benefits.

Figure 7: Scheme Design and Delivery Route Approach



3.16 The preferred delivery model has been identified in three stages:

- Identifying, documenting and analysing five key considerations:
 - Scheme ownership (Section 3.5.2).
 - Infrastructure and logistics (Section 3.5.3).
 - Realising additional benefits (Section 3.5.4).
 - Financing (Section 3.5.5).
 - Scheme Regulation (see Section 6.2).
- Informed by the above analysis of these five levers, and interdependencies between them, a shortlist of four potential delivery models has been identified (Section 3.5.6).
- Comparison and analysis of the four potential delivery models, to identify a preferred model (Section 3.6).

3.17 This analysis has been informed by public consultation and the results of those elements relevant to the delivery option have been summarised in section 3.4.

3.18 It is also assumed that for all delivery models being considered the Scheme Administrator will be considered to be acting as a Principal rather than Agent in relation to the Deposits inflow and outflow. The difference being that as a Principal the Scheme Administrator will recognise the deposits as revenue and expenditure

in its profit and loss account, whereas an Agent would be responsible for managing the collection and disbursement of the deposits, but they would not be recognised as revenue and expenditure in the profit and loss account. This assumption is based on discussions with the Norwegian DRS Scheme. The impact of this is considered further in the Financial Case.

3.5.2 Scheme Ownership

3.5.2.1 *Public v Private v Joint Ownership*

3.19 Potential ownership models are identified in this FBC and cover a public/private/joint ownership matrix. Public ownership would offer increased levels of operational control and sharing in upside benefits but conversely has greater exposure to operational and financial risk. Private sector ownership meanwhile would mitigate these risks, but also reduce the level of operational and budgetary control that the Scottish Government can reasonably expect to exercise. A more detailed analysis of joint ownership models is set out below (Table 20):

Table 20: Summary Ownership Implications

	Public	Private	Joint Ownership
Description	<i>Scottish Government owns and is responsible for the Scheme Administrator</i>	<i>Private sector ownership likely split between producers and retailers</i>	<i>Ownership is split between public sector (Scottish Government) and private sector (likely producers and retailers)</i>
Control / Influence	<i>100% public sector</i> <i>Full ownership and voting rights for public sector</i> <i>Consultative process with private sector</i>	<i>100% private sector (producers/retailers)</i> <i>Public sector influence through initial legislation and regulatory influence only</i>	<i>Various options available, key points to note:</i> <i>25:75 ability to block special resolutions</i> <i>20:80 maximum ownership for PPP structures</i> <i>10:90 typical ownership for board appointments</i>

	Public	Private	Joint Ownership
Assets / Liabilities	<p>Assets could be owned by public sector</p> <p>At risk if scheme fails</p> <p>Greater control over where counting centres are located</p> <p>Public sector can seek to mitigate potential initial capital outlay and risk on cost and ongoing maintenance by the setting of availability and service performance-based contracts</p> <p>The budgetary impact of these could not be confirmed until the full details of any contract design is agreed</p>	<p>Assets owned by private sector</p> <p>Private sector contractually at risk if scheme fails, although there may be an argument that the Scottish Government would step in even if not contractually bound to do so</p> <p>Without incentives private sector may locate counting centres in places not in need of regeneration (although risk may be mitigated as those areas are likely to be cheaper to locate in)</p>	<p>Public sector can seek to mitigate potential initial capital outlay and risk on cost and ongoing maintenance by the setting of availability and service performance-based contracts</p> <p>The budgetary impact of these could not be confirmed until the full details of any contract design is agreed</p>
Risk transfer	Minor	Maximum	Joint risk ownership
Cost efficiency	<p>Implied to be least cost efficient due to public sector managing costs of the Scheme Administrator that they are not funding.</p> <p>Moreover, there may be greater emphasis on delivering wider scheme objectives than reducing the cost base</p>	<p>Implied that the Scheme Administrator would be operated most efficiently due to the incentives for producers to minimise their own costs (as fee payers to the administrator)</p>	<p>Potential tension between cost efficiency drive against meeting wider scheme objectives</p>
Pricing/ Regulation	Regulation unlikely to be substantively different whether the Scheme Administrator is owned by the public sector, private sector, or both. In all cases, the purpose, powers and tools of a regulator would likely remain very similar		
Procurement	Public procurement rules would apply	Public procurement rules unlikely to apply	Likely public procurement rules would still apply
Budgetary (Further detail in section 6.1)	Will result in Resource Departmental Expenditure Limit (RDEL) implications and likely to result in Capital Departmental Expenditure Limit (CDEL) implications for assets unless some form of PPP type contract can mitigate, but this will further increase RDEL implications	Assuming classified to private sector, there should be no direct budgetary implications of the scheme	Budgetary implications will depend on overall classification of the scheme, which is considered further later in this case

Source: Scottish Government Analysis

3.5.2.2 **Corporate Form**

- 3.20 The Scottish Government has evaluated the different corporate structures available. Table 21 details the advantages and disadvantages of seven different corporate forms.
- 3.21 The assessment of these corporate structures has identified a Company Limited by Guarantee (CLG) as the favoured structure as set out in the table below. While all options offer distinctive benefits, the CLG was felt to best meet the Scottish Government's requirements, offering significant flexibility in relation to questions of profit/non-profit, ownership and participation levels. Further discussions will be held prior to FBC Stage 2 to reconfirm this is the preferred structure after discussions with the private sector.

Table 21: Corporate Form Options – Summary Advantages and Disadvantages

	Public Body	Charity	Company Limited by Guarantee (CLG)	Company Limited by Shares (CLS)	Community Interest Company (CIC)	Community benefit societies (CBS)	Co-operative society (COS)
Description	This could either be a government executive agency (Transport Scotland) or a new corporate body created by statute/Royal charter (Sportscotland). It could also be a public company (Caledonian Maritime Assets Ltd (CMAL) or Scottish Water)	This could be either a company limited by guarantee, a community benefit society or a Scottish charitable incorporated organisation (SCIO) – an optional legal form for registered Scottish charities, managed and controlled by trustees who are acting in the interests of the charity and independently	A company owned by member(s) and managed by director(s)	A company owned by shareholder(s) and managed by director(s)	A type of company developed with non-charitable social enterprises in mind, with particular features to safeguard the social 'mission'. It could be a company limited by guarantee or shares	A society involved in industry, trade or business, set up to benefit the wider community, and managed by its committee	A society involved in industry, trade or business, set up to benefit its members only, and managed by its committee
Summary	<p>A public body would be capable of delivering the key objectives.</p> <p>Its constitutional purposes could be framed through legislation, by reference to the key objectives and the attention of the board/management directed towards this.</p> <p>In addition, the framework agreement between the Scottish Government and the public body could contain specific performance metrics around delivery of the key objectives.</p> <p>Of course, the legal form by itself does not deliver on the key objectives, but the public body does provide the highest degree of Scottish Government influence;</p>	<p>A charity is capable of delivering the key objectives.</p> <p>Operations will be aligned to a charitable purpose of protecting the environment. However, it may not be capable of delivering all activities of the DRS if some activities are in fact non-charitable.</p> <p>As a result of charity regulation and charity trustee duties, charities can be more risk averse than other organisations.</p> <p>A SCIO is not considered a suitable vehicle for the DRS because using another corporate form as a charity would mean adding a third tier of regulation (the DRS regulation and the regulation of the Companies Act 2006 or the Co-operative and</p>	<p>A company limited by guarantee is capable of delivering the key objectives.</p> <p>Its constitutional purposes could be framed by reference to the key objectives and focus the attention of the directors.</p> <p>However, its legal form by itself does not deliver on the key objectives, which may require a combination of incentive, regulation and an effective board.</p> <p>There is nothing in the legal form that restricts the ability to deliver.</p>	<p>A company limited by shares is capable of delivering the key objectives.</p> <p>Its constitutional purposes could be framed by reference to the key objectives and focus the attention of the directors.</p> <p>However, that would be unusual in a company limited by shares, which is often incentivised by profit.</p> <p>If the DRS is to be not-for-profit, a company limited by guarantee is probably more appropriate, if it is not to be wholly owned.</p> <p>However, its legal form by itself does not deliver on the key objectives and it may still deliver with a</p>	<p>CIC is capable of delivering the key objectives.</p> <p>Its constitutional purposes could be framed by reference to the key objectives and focus the attention of the directors.</p> <p>However, its legal form by itself does not deliver on the key objectives and that may require a combination of incentive, regulation and an effective board.</p> <p>There is nothing in the legal form that restricts the ability to deliver but care would need to be taken with overall commercial arrangements and contracts in light of the asset lock. It may be restrictive.</p>	<p>CBS is capable of delivering the key objectives.</p> <p>Its constitutional purposes could be framed by reference to the key objectives and focus the attention of the directors.</p> <p>However, its legal form by itself does not deliver on the key objectives and that may require a combination of incentive, regulation and an effective board.</p> <p>A CBS cannot be wholly owned by the Scottish Government.</p> <p>There are difficulties associated with the Scottish Government having control (although 'influence' could be achieved through other</p>	<p>A co-operative society is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise.</p> <p>It is unlikely that the participants in the DRS will have a common, economic, social or cultural need or interest and therefore it is unlikely that the objectives could be achieved.</p> <p>The requirement that control of the co-operative lies with all the members equally means that this entity is not nearly as flexible as the others that we are</p>

Public Body		Charity	Company Limited by Guarantee (CLG)	Company Limited by Shares (CLS)	Community Interest Company (CIC)	Community benefit societies (CBS)	Co-operative society (COS)
	<p>therefore the most direct control over achieving the key objectives.</p> <p>A degree of regulation and an effective and skilled board may also be required to achieve all of the objectives set.</p>	<p>Community Benefit Societies Act 2014 already applying). These requirements will place an unnecessary burden on the entity as it begins to operate and may mean that too much focus is placed on compliance and not enough on delivery (at both the design stage of the DRS and delivery of the DRS, at least initially).</p> <p>It should be possible to build into the regulatory regime for the DRS the good points about the regime under the Charities Act and whoever designs the DRS regulatory regime will have less to be concerned about in relation to regulatory conflict.</p>		combination of incentive, regulation and an effective board.		means e.g. contractual arrangements).	considering in terms of control structure.

Source: Brodies LLP Analysis

3.5.2.3 Profit / Non-Profit

- 3.22 An analysis of existing DRS schemes (see Annex 6.1.2) indicates that most DRS schemes (and in particular more recent DRS schemes) have been set up as private sector classified vehicles on a non-profit basis. A non-profit approach enables the Scheme Administrator to retain a focus on minimising cost to producers and maximising income generation (e.g. through sale of recyclate), without requiring it to return profits or dividends to shareholders.
- 3.23 Adopting a for-profit structure may drive enhanced cost efficiencies, linked to the delivery body's accountability to external stakeholders, payment of dividends etc. Against a backdrop of austerity there has been an increasing trend in recent years for public sector bodies to set up profit-making subsidiaries as a route to drive revenue growth and cost efficiencies.
- 3.24 Adopting a not-for-profit scheme structure under either a public or private procurement would enable the Scheme Administrator to manage its activities with a view to minimising cost and the resulting fees charged to producers. Under a non-profit approach any surpluses generated in the scheme would be re-invested in the scheme or used to reduce the future costs to producers, rather than distributed to shareholders.
- 3.25 Informed by these factors and more detailed considerations as summarised below (Table 22), a non-profit structure is seen as most likely to deliver against the four key objectives of the scheme. The Memorandum and Articles of Association will be appropriately worded to embed a high performing environmental and social ethos into the company.

Table 22: Profit v Non-Profit Considerations

	Profit	Non-Profit
Public	<p>It has become more common in recent years for public sector organisations to set up subsidiary structures, either wholly owned or joint ventures, with the purpose of delivering efficiencies, enhanced value and profits, which can then be used to re-invest in services.</p> <p>There is a risk that a public sector model with profit could be viewed as being used to levy a 'tax' on consumers which, in turn, could lead to significant issues with buy-in from private sector producers, retailers and consumers. There may also be 'vires' issues for the Scottish Government if the scheme is deemed to be a tax which is not contemplated under the Scotland Act.</p>	<p>More common position for public sector bodies as they seek to manage their funding on an annual basis to deliver services.</p> <p>This approach would allow the public sector to retain control, without being driven to generate maximum profits from the scheme – any surpluses would reduce fees to producers or be re-invested in the scheme. This approach would allow for costs and income to be optimised as far as possible within a public sector environment.</p>
Private	<p>This approach has a key motive to generate and maximise profits and to provide an appropriate return on capital for shareholders. The profit motive would focus on maximising achievable returns in the long term. A profit model would not necessarily lead to the lowest fees to producers, as the scheme would need to generate profits for returns paid to shareholders. Accountability to external shareholders may drive enhanced cost efficiencies.</p>	<p>Not-for-profit organisations are distinguished from profit maximising organisations by three characteristics. First, most not-for-profit organisations cannot distribute profits to external shareholders providing risk capital for the business. Secondly, they do not distribute dividends, so any profit (or surplus) generated is retained by the business as a further source of capital. Thirdly, their objectives usually include some social or charitable aim, which in their absence would not be readily provided efficiently through the workings of the market scheme.</p> <p>The private not-for-profit route retains the mechanism to optimise scheme costs and revenues but without</p>

making returns for shareholders. This could minimise the cost to producers and, through appropriate regulatory oversight, allow a number of wider social objectives to be met also (see Section 3.5.4).

Source Deloitte LLP

3.5.3 Infrastructure and Logistics

3.26 Infrastructure and logistics is the third key lever against which a potential delivery options shortlist has been assessed. This section focuses on the key physical scheme elements comprising the DRS scheme – RVMs, counting/bulking centres, and reprocessing centres, plus the logistical infrastructure which will need to be overlaid across these.

3.5.3.1 *Reverse Vending Machines*

3.27 The preferred scheme design is forecast to require approximately 3,000 RVMs to be installed across Scotland. The investment in these RVMs will be the largest of the upfront capital costs (approximately £60 million)⁴⁸.

3.28 While the Scheme Administrator will outline the technical specification for the RVMs, retailers⁴⁹ are expected to take the final decision for how the RVMs are to be procured, which may be influenced by the legal and regulatory framework of the scheme. It is expected that the retailers – as opposed to the Scheme Administrator – would be responsible for the acquisition/installation of the RVMs. This would allow the Scheme Administrator to mitigate upfront capital cost and potential for liabilities as a result of ownership. The cost of acquisition, on ongoing maintenance and operation of the RVMs would then be a constituent element of the handling fee paid to retailers (further detail provided in the Financial Case).

3.29 Retailers could choose to fund RVM purchase from their own cash reserves, or arrange their own financing; possibly under a leasing arrangement. The Scheme Administrator could also arrange a financing package for retailers potentially through a third party finance company. It will be key that flexibility is given to individual retailers, who will have different motivations based on their location, size and nature of their business.

3.5.3.2 *Counting/Bulking Centres*

3.30 The preferred scheme design identifies a need for four counting and bulking centres at an estimated upfront capital cost of around £27m⁵⁰, to enable sorting of the collected recycled materials prior to the sale of materials to a reprocessing company.

3.31 Successful site acquisition and subsequent construction and mobilisation of the four centres will be integral to the scheme's success, with the FBC developed on the expectation that responsibility for this activity will fall to the Scheme Administrator. The Scheme Administrator may look at leasing or otherwise

⁴⁸ Socio-Economic Case

⁴⁹ Retailers expected to include convenience stores, supermarkets and outlets drawn from across the HoReCa sector – hospitality, restaurants and cafes

⁵⁰ Financial Case

contracting with third parties as an alternative to outright ownership across some or all of the four centres, mitigating upfront cash investment and potential tax structuring benefits.

3.32 Further considerations of potential funding options for this are considered in section 3.5.5.

3.5.3.3 **Processing**

3.33 The Scheme Administrator is forecast to collect in excess of 1.7bn⁵¹ containers a year based on the preferred scheme design. There is a significant value to the material being collected and realising this value will partially fund the costs of operating the scheme and offer the opportunity to potentially realise additional benefits.

3.34 The Scheme Administrator will adopt one of three key reprocessing options:

- **In-house provision** – The most ‘interventionist’ strategy.
- **Sale of Materials supported by Inward Investment** – Catalysing established Scottish re-processor(s).
- **Sale of Materials with no Inward Investment** – Sale of materials to highest bidder.

3.35 Key considerations around reprocessing are detailed in Table 23 below. In summary:

- The In-house provision options would be challenging to deliver within the required timescales envisaged and would require further levels of investment by the Scheme Administrator, as well as taking on the risks of a complex area of business.
- A straight sale of materials to an established re-processing contractor located elsewhere is the least risky option. If inward investment can be encouraged, this may deliver further additional benefits of the Scheme, particularly CO₂ saving. This is particularly true if materials do need to be transported abroad as a result of the inward investment.
- It will be for the Scheme Administrator to make a final decision on the delivery route for re-processing. Although this will be influenced by the legislative and regulatory framework of the scheme.
- A private sector Scheme Administrator would ultimately be free to manage its use of recyclate and the net proceeds arising. Some degree of influence may be available to the Scottish Government through regulation and dialogue with the private sector Scheme Administrator, although the Scottish Government is unlikely to be able to require a private sector Scheme Administrator to utilise inward investment of this type.

⁵¹ Socio-Economic Case

Table 23: Re-processing Options – Key Considerations

Option	Description	Key Considerations
In-house provision	<p>Scheme Administrator sets up its own reprocessing centre/business.</p> <p>There will be significant up-front capital investment costs and additional staffing requirements as opposed to an outsourced provision</p>	<ul style="list-style-type: none"> • Greater direct control of service delivery, reduced likelihood of governance and control issues • Increased flexibility for change • Ability to support SG 'Making Things Last' strategy • Significant upfront costs • Lack of skills and technological expertise
Sale of materials supported by Inward Investment	<p>SG uses influence and investment to encourage established reprocessor company in Scotland</p>	<ul style="list-style-type: none"> • Supports achievement of circular economy • Classification considerations as direction in key areas of operation such as this could result in a public classification whether the Scheme Administrator is owned by the public or private sector • More limited market interest from producers which might face higher producer fees
Sale of Materials with no Inward Investment	<p>Scheme Administrator sells materials to highest bidder</p>	<ul style="list-style-type: none"> • Potential to minimise costs of scheme to producers as sale value is maximised • Does not support achievement of circular economy • Simplest route to pursue and, if this ends up being the most cost-effective route, will potentially be the most attractive to a private sector Scheme Administrator

Source: Scottish Government

3.5.3.4 **Logistics**

- 3.36 The preferred scheme design will include the requirement of circa 17,000 businesses to provide a facility for the public to return their recyclate. This will in turn require a substantial logistics operation to collect on a regular basis from retailers and deliver to the counting centres.
- 3.37 The two key options for the provision of the logistics service are setting up of an in-house logistics service or outsourcing to an existing provider. The key considerations for each of these options are outlined in Table 24.
- 3.38 It is likely that the Scheme Administrator would outsource these services, given the competitive market for logistics suppliers who might be able to provide these services. This can minimise costs and avoid the need for capital funding of logistics systems and equipment, as well as minimising the financial risk to the Scheme Administrator from the required logistics services.
- 3.39 There may also be an opportunity for the large retailers to mitigate some of the costs by 'back-hauling', i.e. using their own logistics to return recyclate to the counting centres. At this point no costings for this have been undertaken but this

will be examined as part of the FBC Stage 2 to ascertain market interest and the likely impact on cost.

Table 24: Logistics Options – Key Considerations

Option	Description	Key Considerations
In-house provision	<p>Scheme Administrator sets up its own in-house logistics service</p> <p>There will be upfront capital investment costs and additional staffing requirements as opposed to an outsourced provision</p>	<ul style="list-style-type: none"> • Greater direct control of service delivery, reduced likelihood of governance and control issues • Increased flexibility for change • Reduced exposure of logistics failure • Upfront investment cost
Outsourced	<p>Scheme Administrator tenders for an existing logistics provider to deliver service to agreed level in return for contractual payments</p>	<ul style="list-style-type: none"> • Mature logistics market already in place, competitive environment driving innovation and price • Allows Scheme Administrator to better focus on the achievement of the key targets for recycling • Controlled costs – agreement of fixed contract price will give greater certainty for the operation of the Scheme Administrator • Increased reach – outsourcing can give you access to capabilities and facilities which would otherwise require significant upfront investment

Source: Scottish Government

3.5.4 Additional Benefits

3.40 A total of 18 additional benefits were considered in relation to the DRS, with the nature of the benefit and applicability to each of the delivery options. These benefits are summarised in Table 25 below and evaluated against the alternative delivery options in Section 3.6.2.

Table 25: Additional Benefits Identified

	Additional Benefit	Description
1	Improved material quality	One of the most significant benefits from DRS is the improvement in quality of materials generated for recycling. The collection method almost eliminates the potential for contamination.
2	Attracting and securing processing capacity to Scotland	The benefit of attracting or securing manufacturing within Scotland to make use of supply side improvement that this high quality stream of recyclate represents.
3	Influencing packaging design	Producer fees could be varied based on rewarding positive design choice i.e. lightweight or use of recycled content.
4	Wider litter impacts	Indirect costs associated with waste being in the wrong place.
5	Reduction in propensity to litter	Ability to reduce people's propensity to litter through conscious and subliminal messaging.
6	Magnified impacts of litter on certain socio-demographic groups	Any reduction in litter is likely to have a larger positive impact on certain socio-demographic groups.

	Additional Benefit	Description
7	Contribution to sector sustainability strategies	All of the sectors, which represent the products within scope of the DRS, have an environmental strategy.
8	Increased footfall for retailers	There is evidence to suggest that where the public come to redeem their deposits, they are likely to spend their redeemed deposit in the store they receive it from.
9	Collection efficiencies – utilising existing facilities	The use of existing infrastructure, such as existing fleet movements or waste management facilities, could be utilised to minimise costs of the scheme.
10	Supporting economies of scale in collections	The national nature of the scheme would allow the comprehensive infrastructure to be utilised for a variety of purposes.
11	Non-local authority litter savings	The increased recycling rate will have a direct impact on the level of littering which results in savings through reduced litter collections.
12	Involvement of third sector in delivery	Use of third sector organisations to create additional benefits such as employment opportunities to young people or socially disadvantaged groups.
13	Financial benefits for community organisations	The DRS operates a number of opportunities for good causes to benefit financially.
14	Increase in recycling of non-DRS materials	The DRS will increase capture levels of non-DRS materials. CO ₂ e benefits plus additional revenue from recycled content.
15	Wider behaviour change messaging	The roll-out of the physical DRS infrastructure across the country will provide an excellent foundation to communicate scheme benefits to both operatives and wider public.
16	Improved data quality and transparency	Provided robust data systems are set up. Implementation of the DRS scheme will provide a rich data source on recycling attitudes and trends.
17	Other environmental benefits – carbon pricing	The DRS scheme can contribute positively to help relevant stakeholders meet carbon pricing targets/avoid financial penalties as a result.
18	Creating a circular economy exemplar	Delivering a successful ‘closed loop’ DRS scheme would bring positive wider PR and interest from other entities looking to deliver DRS schemes.

Source: Scottish Government

3.41 The overall scheme design, governance and regulatory regime will have an influence on the achievability of these wider objectives:

- A public sector owned and classified Scheme Administrator would provide the Scottish Government with the maximum flexibility in relation to all aspects of the scheme including its ability to realise additional benefits of the type identified above.
- A private sector classified Scheme Administrator may still be able to deliver some of these benefits, although direct public sector control or material influence (e.g. in areas such as the location of a materials recycling facility in Scotland, involvement of third party/sector in delivery or establishing a circular economy exemplar) are likely to lead to a public sector classification.

3.42 Through effective design and regulation of the scheme, the Scottish Government will maximise the realisation of ancillary benefits delivered by a private sector Scheme Administrator and those other businesses with a role in DRS.

3.5.5 Financing

3.43 The detailed costing and funding of the scheme is set out in the Financial Case but the following section gives an overview of the costs (capital and operating) which will be incurred and how these may be funded.

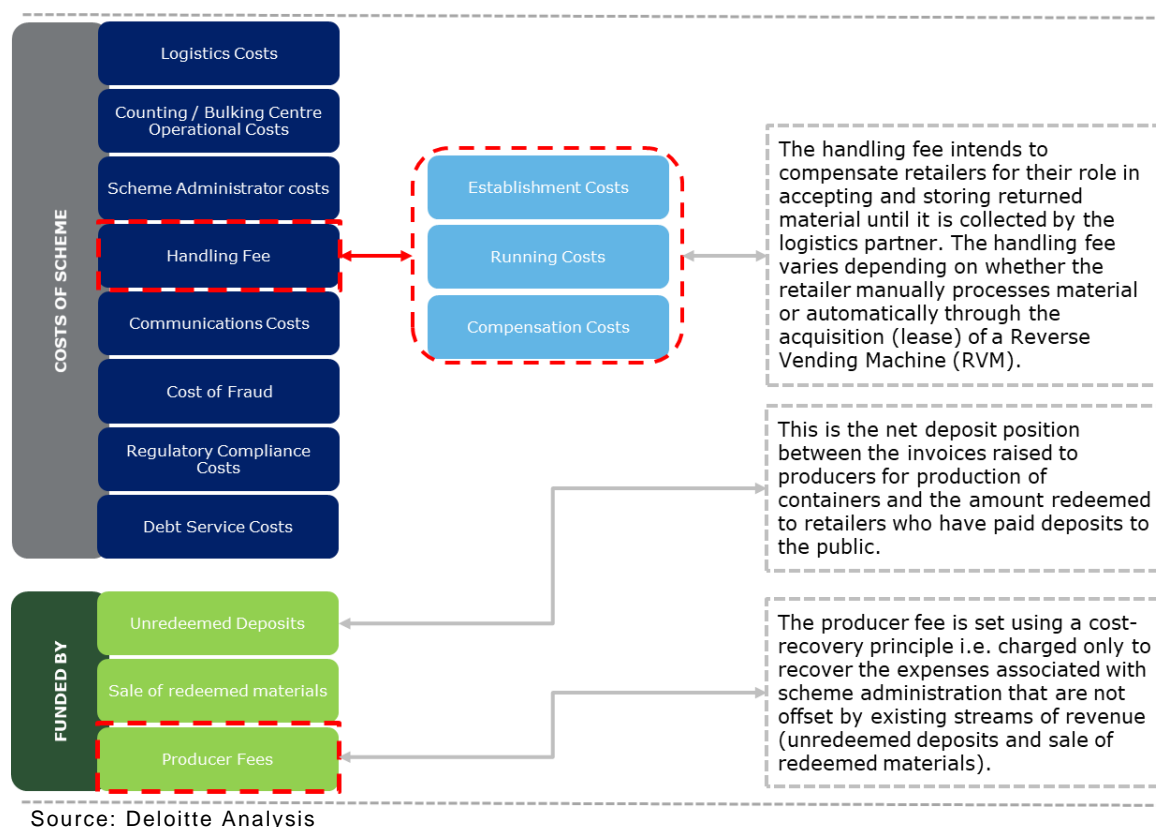
3.5.5.1 *Funding the Costs of the Scheme*

3.44 The scheme will require upfront capital investment and ongoing operational costs. If the scheme will be non-profit, the key principle is that ongoing operational costs will be funded by revenue from unredeemed deposits and the sale of redeemed materials for re-processing. The balance of costs would then be charged to the producers by way of a producer fee. The producer fee could be set as a single amount per container or allocated as an alternative figure for different material types. The latter approach is more consistent with other schemes and aims to avoid different material types subsidising one another. Producers would provide a report to the Scheme Administrator detailing the quantity of containers sold to the wholesalers. The Scheme Administrator would then invoice the producers based on the quantity at the appropriate deposit rate per container.

3.45 The producer, for the purposes of DRS, is defined as the brand owner, resulting in a single point of responsibility within the supply chain. This would include large and small manufacturing businesses who make their own products and also retailers who sell their own brand products.

3.46 A summary of the key constituent cost elements and the funding route is set out in Figure 8 Operational Costs and Funding. The estimated costs and resultant producer fees are examined as part of the Financial Case.

Figure 8: Operational Costs and Funding



3.47 In addition to the annual operating costs of the scheme, there are upfront capital investment requirements in relation to the acquisition of around 3,000 RVMs, four counting/bulking centres and the IT software requirements. The options for the financing of these assets has been summarised in section 3.5.5.2.

3.5.5.2 *Financing Options*

3.48 The key options for funding the upfront capital are considered below. The most effective solution will be selected as part of the subsequent market testing work and confirmed as part of the FBC Stage 2.

3.49 Where costs are met through direct investment by a public sector Scheme Administrator, capital and revenue budgets would be required investments. However, there are a number of further financing considerations for a public sector scheme administrator:

- Early investment and pre-operating costs would generally be met by the Scheme Administrator.
- Under Option 1B (as well as the private sector options), the RVMs are assumed to be financed by the equipment suppliers, the retailers or other third-party funders. The decision on which route to pursue may vary for each site as, for example:
 - Major retailers may determine that the lowest cost approach would be to acquire and maintain these RVMs directly using corporate borrowing or other available corporate capital.

- Equipment providers may offer finance such that the retailers have an option to rent or lease the RVMs.
 - Alternative finance companies may develop to acquire the RVMs and to offer these on lease or hire to retailers. It is possible that this funding could come from commercial providers and could also include commercially-based finance from the Building Scotland Fund (BSF) or the Scottish National investment Bank (SNIB). BSF and SNIB are Scottish Government initiatives that will offer commercial finance to private businesses. Specifically, the novel nature of the technology and the Scottish Government's greater ability to take policy risk (e.g. if changes are made to the scheme which alter the need for RVMs or otherwise affect the ability of the retailers to finance these) might make BSF or SNIB attractive lenders to the scheme and potentially help attract other providers of finance.
 - It would be possible for the Scheme Administrator to develop financing packages for RVMs along the lines of the above, and retailers could understand the financing options available.
 - The Scheme Administrator may be able to utilise cash inflows from deposits, but this will depend upon both the level of evidence the Scheme Administrator can provide in relation to the level of deposits which will never be redeemed (see Financial Case) and the detailed regulatory framework of the scheme which will be developed as part of FBC Stage 2.
- 3.50 The Scheme Administrator would need to have access to finance to meet the set-up costs of the scheme. This could include finance from:
- A producer fee being charged in the start-up year.
 - The Scheme Administrator's capital as provided by way of debt or equity from the producers which own the non-profit Scheme Administrator.
 - Banks or other financial institutions providing finance to the Scheme Administrator.
 - As with RVMs, BSF or SNIB finance may also be appropriate to finance the Scheme Administrator. These Scottish Government lenders and investors, allied to the Scottish Government's unique position in implementing the DRS, may have a greater level of understanding of policy risks surrounding the scheme and potentially attract other providers of finance.
- 3.51 The final financing approach will be the responsibility of the Scheme Administrator when it is formed. Details of the financing assumptions used in this FBC are described in the Financial Case.

3.5.6 The Delivery Options Shortlist

- 3.52 Informed by the analysis as set out in sections 3.5.2 – 3.5.5 above, a shortlist of four potential delivery options have been identified under which the Scheme Administrator might deliver a successful non-profit scheme. In all options the corporate form is a CLG.
- 3.53 The four delivery options are set out below. The key differentials are the ownership and voting structure and how the constituent elements of the scheme are delivered (i.e. publicly procured or procured by private sector).

- **Option 1A – Public Owned Scheme Administrator and RVMs**
 - **Ownership & Influence** – 100% public sector owned with full ownership and voting rights, consultative engagement with the private sector.
 - **Infrastructure and Logistics** – Counting and bulking centres procured by public sector (Scheme Administrator) who assumes construction and development risk. Logistics outsourced. RVMs procured by Scheme Administrator.
 - **Financing** – Public sector borrowing to fund upfront capital investment. Potential need for ongoing public sector revenue funding based on scheme performance.
- **Option 1B – Public Owned Scheme Administrator**
 - As per Option 1A but with retailers bearing responsibility for acquiring/financing/owning the RVMs. The retailers would be reimbursed by the public sector Scheme Administrator through the handling fee.
- **Option 2 – Private Owned**
 - **Ownership and Influence** – 100% private sector owned. Public sector influence through legislation, regulation and establishing robust feedback loops.
 - **Infrastructure and Logistics** – Counting and bulking centres procured by private sector who assumes construction and development risk. Logistics outsourced. RVMs procured by retailers.
 - **Financing** – Private sector classified Scheme Administrator responsible for managing early cash balances and securing financing necessary to deliver the scheme. The RVMs would be financed by retailers, rather than the Scheme Administrator, in this approach. The retailers would be reimbursed by the Scheme Administrator through the handling fee.
- **Option 3 – Public/Private**
 - **Ownership and Influence** – 80% private sector 20% public sector owned. With public sector share limited to 20% to minimise potential risk of reclassification.
 - **Infrastructure and Logistics** – Counting and bulking centres procured by private sector who assumes construction and development risk. Logistics outsourced. RVMs procured by retailers.
 - **Financing** – Private sector classified Scheme Administrator responsible for managing early cash balances and securing financing necessary to deliver the scheme. The RVMs would be financed by retailers, rather than the scheme administrator, in this approach. The retailers would be reimbursed by the Scheme Administrator through the handling fee.

3.6 Delivery Option Assessment











3.54 With previous HM Treasury guidance for comparing public versus private models still to be replaced, the comparison of the different delivery options has instead been assessed against eight key factors, including:

- Previous scheme precedents – *Number and effectiveness*.
- Realising additional benefits.
- Control/influence over the Scheme Administrator.
- Achieving industry buy-in.
- Regulatory.
- Impact to the Scottish Government.

- Fraud prevention.
- Budgetary control.

3.55 The choice of factors has been directly informed by research into existing DRS schemes. Each of these elements are considered in turn below:



3.6.1 Precedents – Comparison to other DRS Schemes

Strong  Weak 	Option 1A Public sector - RVM	Option 1B Public sector - no RVM	Option 2 Private sector	Option 3 Joint venture
Number				
Effectiveness				
<p>There are numerous DRS schemes implemented across Europe and beyond. These schemes provide a significant evidence base for performance and have been used as a consideration for the selection of the preferred delivery option.</p> <p>The majority of recent schemes and particularly in Europe:</p> <ul style="list-style-type: none"> • Have successfully followed and operated a private sector operated, non-profit model. • Been efficient in managing the operating costs of the scheme efficiently. The private sector is incentivised to run on an efficient basis and therefore maximises recycling rates and minimises fees to producers. <p>More detailed analysis of these schemes can be found at Annex 6.1.2</p>				

3.6.2 Realising Additional Benefits

3.56 As discussed in Section 3.5.4, there are a variety of additional benefits that the scheme might deliver. These have been considered against the delivery options in Table 26 below.

Table 26: Realising Additional Benefits – Evaluation of Delivery Options

Additional Benefit	Description	Public Options (1A, 1B)	Private Options (2, 3)	Options Commentary
1 Improved material quality	One of the most significant benefits from DRS is the improvement in quality of materials generated for recycling. The collection method almost eliminates the potential for contamination.			<p>All the options would deliver this benefit.</p> <p>Under Options 2 and 3, regulation could be used to incentivise the private sector to continually generate high-quality recyclate in order to maintain the performance of the scheme.</p> <p>Options 1A and 1B would rely on the public sector trying to encourage the private sector to use the best quality of material.</p>

	Additional Benefit	Description	Public Options (1A, 1B)	Private Options (2, 3)	Options Commentary
2	Attracting and securing processing capacity to Scotland	The benefit of attracting or securing manufacturing within Scotland to make use of supply side improvement that this high-quality stream of recycle represents.			Option 1A and 1B are likely to offer slightly higher benefits as the ongoing involvement of the public sector allows greater opportunity to use targeted incentives to encourage success.
3	Influencing Packaging Design	Producer fees could be varied based on rewarding positive design choice, i.e. lightweight or use of recycled content.			Options 1A and 1B offer greater opportunity to ensure that this approach is adopted and covers the widest range of packaging.
4	Wider litter impacts	Indirect costs associated with waste being in the wrong place.			All the options would deliver this benefit. There is not considered to be a significant difference between the options.
5	Reduction in propensity to litter	Ability to reduce people's propensity to litter through conscious and subliminal messaging.			All delivery options would deliver this benefit. Options 1A and 1B as public sector operated would provide the greatest opportunity for direct influence through conscious messaging, although it can be argued that the performance targets set to a private sector operator will encourage them to innovate to ensure that these targets are met. There is little difference between the delivery options.
6	Magnified impacts of litter on certain socio-demographic groups	Any reduction in litter is likely to have a larger positive impact on certain socio-demographic groups.			All delivery options would deliver this benefit.
7	Contribution to sector sustainability strategies	All of the sectors, which represent the products within scope of the DRS, have an environmental strategy.			All delivery options would deliver this benefit. Options 2 and 3 will allow the private sector to better shape the Scheme Administrator to ensure the scheme can support delivery of their own strategies/targets.
8	Increased footfall for retailers	There is evidence to suggest that where the public come to redeem their deposits, they are likely to spend their redeemed deposit in the store they receive it.			All delivery options would deliver this benefit.
9	Collection efficiencies and utilising existing facilities	The use of existing infrastructure, such as existing fleet movements or waste management facilities could be utilised to minimise costs of the scheme			As outline earlier the use of an outsourcing delivery for the logistics has been identified as part of the preferred delivery option and therefore the benefit is expected to be achieved by all delivery options.
10	Supporting economies of scale in collections	The national nature of the scheme would allow the comprehensive infrastructure to be utilised for a variety of purposes.			As outlined earlier the use of an outsourcing delivery for logistics has been identified as part of the preferred delivery option and therefore the benefit is expected to be achieved by all delivery options.
11	Non-local authority litter savings	The increased recycling rate will have a direct impact on the level of littering which results in savings through reduced litter collections.			This will be driven by the performance of the Scheme Administrator. All delivery options would deliver this benefit
12	Involvement of third sector in delivery	Use of third sector organisations to create additional benefits such as employment opportunities to young people or socially disadvantaged groups			The public sector delivery options provide more scope for making use of the third sector. The private sector may need additional encouragement to make use of the third sector unless there is a perceived commercial benefit from their involvement.
13	Financial benefits for community organisations	The DRS operates a number of opportunities for good causes to benefit financially			It is expected that all delivery options can help deliver this benefit. The decision of an individual to donate their deposit to a charitable cause does not financially disadvantage the private sector so there is no significant difference between the options.

Additional Benefit	Description	Public Options (1A, 1B)	Private Options (2, 3)	Options Commentary
14 Increase in recycling of non-DRS materials	The DRS will increase capture levels of non-DRS materials. CO ₂ e benefits plus additional revenue from recycled content			All delivery options would deliver this benefit The scheme will encourage the public to recognise the benefits of recycling more generally and this will result in an uptake in additional recycling of non-DRS materials.
15 Wider behaviour change messaging	The roll-out of the physical DRS infrastructure across the country will provide an excellent foundation to communicate scheme benefits to both operatives and wider public.			All delivery options would deliver this benefit. Options 1A and 1B as public sector operated would provide the greatest opportunity for direct influence through conscious messaging.
16 Improved data quality and transparency	Provided robust data systems are set up, implementation of the DRS scheme will provide a rich data source on recycling attitudes and trends			All delivery options would deliver this benefit. Options 1A and 1B as public sector operated would provide the greatest opportunities here given that the public sector would be the direct owner of all data generated although careful compliance with public data controls would need to be ensured.
17 Other environmental benefits – carbon pricing	The DRS scheme can contribute positively to help relevant stakeholders meet carbon pricing targets/avoid financial penalties as a result.			All delivery options would deliver this benefit.
18 Creating a circular economy exemplar	Delivering a successful 'closed loop' DRS scheme would bring positive wider PR and interest from other entities looking to deliver DRS schemes.			It is expected that all delivery options can help deliver this benefit. The public sector options are considered more likely to achieve benefits as the private sector would be less inclined to deliver on this if it was more expensive or complicated to achieve.

Source Scottish Government

3.57 The overall scheme design, governance and regulatory regime will have an influence on the achievability of these wider objectives:





- A public sector owned and classified Scheme Administrator would provide the Scottish Government with more flexibility in relation to all aspects of the scheme, including its ability to realise additional benefits of the type identified above.
- A private sector classified Scheme Administrator may still be able to deliver some of these benefits, although benefits that lead to specific areas of public sector control or material overall level of public sector control are likely to lead to a public sector classification.

3.58 Further work on the detailed scheme design will be undertaken to determine the extent to which the identified ancillary benefits might be achieved through a private sector solution. To support the design of the Scheme Administrator to maximise the realisation of the additional benefits an 'Additional Benefits' work package is being developed with the Implementation Advisory Group (see Management Case for further detail).





3.59 Some influence of a private sector Scheme Administrator may be possible through the original scheme design and the underlying regulatory regime. Nevertheless, taken in the round, the influence available to the Scottish Government will be limited if a private sector classification is to be achieved.

3.60 A private sector classified DRS will still be able to achieve on the majority of the identified additional benefits which has been evidenced by the performance of







other schemes in Europe. Overall, the options are evaluated for these potential ancillary benefits below.

Strong ● Weak ○	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Realising additional benefits				
<p>In addition to the eight key factors against which delivery models have been assessed, the OBC identified an additional 20 potential wider benefits that could result from a successfully delivered scheme to some degree dependent on the chosen delivery model. Two of these benefits (impact on producer operational efficiencies and local authority waste collection optimisation) have now been quantified and incorporated within the Net Present Value (NPV) calculation within the Socio-Economic Case.</p> <p>Overall, the two public sector options were found to be more conducive to enabling these benefits to be realised than the private sector options. There would still be scope to achieve these benefits under a private sector option, but this would be dependent on the Scottish Government putting in place a robust and flexible regulatory regime that incentivises private sector partners to help achieve these additional benefits, without putting at risk the private sector classification of the scheme.</p>				







3.6.3 Control / Influence over Scheme Administration

Strong ● Weak ○	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Control/influence over scheme administration				
<p>The public sector ownership of Options 1A and 1B provide the clearest and simplest opportunity for the public sector to direct the way in which the scheme is operated. Under these options, assuming the scheme would be public sector classified, the control and influence is only limited by legislative restrictions.</p> <p>The 100% private sector ownership of the Scheme Administrator under Option 2 means that control/ influence for the public sector may only be achieved in other more limited ways. The public sector will be limited to ensuring the legislative and regulatory framework for the scheme is set in an effective way to incentivise the private sector to perform in terms of the targets set.</p> <p>Under Option 3, partial ownership of the scheme by the public sector, would offer some degree of influence although the private sector would always have a majority vote and control.</p>				

3.6.4 Achieving Industry Buy-In







Strong  Weak 	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Achieving industry buy-in				
<p>The feedback from industry (both producers and retailers), as part of the formal public consultation and further informal discussions, has indicated their preference to own and operate the scheme. The industry view is they are better placed to control and manage the scheme, to ensure it is operated in the most effective and efficient manner.</p>				

3.6.5 Regulatory

Strong  Weak 	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Regulatory				
<p>Regulatory powers would normally be created and entrusted by the Scottish Government. The regulator may be created for the sole purpose of regulating the DRS, or the powers and functions required to fulfil these duties may be entrusted to an existing authority, such as the Scottish Environment Protection Agency (SEPA). At an overarching level, scheme regulation will seek to satisfy three key criteria:</p> <ul style="list-style-type: none"> • Ensure the DRS Scheme Administrator is able to meet its objectives. • Ensure the overall scheme is operated efficiently and effectively, capturing appropriate materials and enforcing scheme performance. • Provide an effective incentive regime to maximise recycling rates, which will contribute to development of a circular economy in Scotland. <p>Key to effective regulatory oversight will be developing appropriately calibrated KPIs and incentive mechanisms to penalise failures and achieve targets, but also reward outperformance – for example by reducing producer fees in future years.</p> <p>While many of the details of the scheme’s design and its regulations remain to be determined, at a high level any regulator would need to set out a range of ‘rules’, along with compliance and enforcement activities. These will encompass deposits, handling fees, materials in scope, packaging tracing/marking, registration and collateral, and helping to facilitate the wider additional benefits offered by the DRS (see <i>Section 3.6.2</i>).</p> <p>Regulation, and more specifically <i>excessive</i> regulation, needs to be considered in the context of the classification (public or private) of the scheme. This is relevant to Options 2 and 3 (private and joint venture) where excessive regulation could potentially impact on a private sector classification. This issue is discussed further in Annex 6.2.</p> <p>A critical element of successful regulation will be to ensure effective interplay with the wider additional benefits offered by the scheme – see <i>Section 3.5.4</i>. With greater operational control</p>				







offered under a public sector delivery option, there should be less need for regulation to ensure these benefits are realised and vice versa.

3.6.6 Impact to the Scottish Government

Strong  Weak 	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Impact to the Scottish Government				

While potentially offering greater upside reward, the two public sector options – and particularly Option 1A – would significantly increase the Scottish Government's exposure to project risk. The public sector will be responsible for the Scheme Administrator ensuring collection and redemption of deposits, minimising fraud, minimising costs, regulatory compliance and managing liabilities. Options 2 and 3 substantially transfer risk from the Scottish Government to the private sector. The performance and cost efficiency of the scheme will be the responsibility of the private sector. The public sector will use the regulator to manage the performance risks of the scheme.

3.6.7 Fraud Prevention

Strong  Weak 	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Number				

Evidence from established jurisdictions indicates that a level of fraud should be anticipated within the scheme. This might occur in a number of ways and can include:

- Ineligible materials⁵² are accepted manually by retailers and deposits are paid. However, material is ineligible for sale and potentially contaminates eligible sale material.
- Ineligible materials are accepted through the automatic RVM and deposits are paid. However, material is ineligible for sale and potentially contaminates eligible sale material.
- Illegally manipulating/tampering with RVMs to claim additional deposits for the same material.







The various types of fraud can include a decrease in unredeemed deposits revenue, a decrease in sale of materials revenue and potentially an increase in handling fees due to the introduction of additional material into the DRS eco-system.

⁵² Ineligible materials can be containers trafficked from outside the jurisdiction of the scheme, or alternatively, locally-produced containers that are made of material that is not included within the remit of scheme i.e. HDPE.

The Scheme Administrator will have a key role in ensuring the minimisation of fraud and, generally, the public and private sector can place the same level of assurance checks and safeguards in place to mitigate. A private sector operated model would however have greater control over the introduction of labelling which can further minimise potential fraud in the system.

3.6.8 Impact on Public Sector Budgets

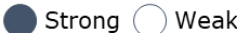




































- 3.61 Alongside value for money, the budgetary implications of each feasible delivery option has also been considered. This incorporates analysis of the various revenue and cost streams that can impact on the Scottish Government, along with how the scheme is classified for accounting purposes under relevant regulations.
- 3.62 On the basis of the expected scheme design of a private sector model (Options 2 and 3) we assume the Scheme is likely to be classified as private sector under relevant accounting regulations, meaning there will be no additional budgetary implications for the Scottish Government as a result of the scheme. The Scottish Government would, however, need to ensure that regulatory or other systems of control are not deemed sufficiently onerous to threaten this classification.
- 3.63 The public sector may incur additional regulatory costs, but it is expected these would be charged back to the private sector as a compliance fee in line with other regulated activities such as utility companies, and this would result in a net nil impact to budgets.
- 3.64 The final classification of the Scheme Administrator would be undertaken by the Office for National Statistics (ONS) and can only be completed once the full commercial details have been finalised, as a number of elements will need to be considered to achieve a final view.
- 3.65 Further detailed analysis of accounting and budgetary implications can be found at *Annex 6.1*.

Strong  Weak 	Option 1A Public sector – RVM	Option 1B Public sector – no RVM	Option 2 Private sector	Option 3 Joint venture
Impact on public sector Budgets				
<p>In line with control and influence over scheme administration, public sector ownership of Options 1A and 1B provide the clearest and simplest opportunity for the public sector to direct the way in which project budgets are operated.</p> <p>Public sector classified schemes will impact on public sector capital and revenue budgets. A private sector owned and managed scheme will not. Full consideration of these issues is set out at <i>Annex 6.1</i></p>				

3.6.9 Summary Assessment of Delivery Options

3.66 The findings of the assessment in sections 3.6.1 to 3.6.8 are summarised in Figure 9 below:

Figure 9: Summary of delivery options

Heading	Option 1A	Option 1B	Option 2	Option 3	Commentary
Option Summary	Public Sector Owned and asset procured/owned	Public Sector Owned, Public Sector Procure Counting Centres/Bulking Centres, Retailers procure RVMs	Private Sector Owned, Scheme Administrator procure counting centres/ bulking centres. Retailers procure RVMs	Public: Private ownership (10:90, 20:80). Scheme Administrator procure counting centres/ bulking centres. Retailers procure RVMs	
Precedents					
Number					The most common implemented DRS in Europe (and globally) are private sector owned and operated
Effectiveness of achieving recycling target	This has been considered but due to differences in precedent Scheme Designs it was agreed that correlating higher recycling rates to a particular Delivery Option could not be clearly evidenced and therefore this has not been considered as a differentiating factor.				
Effectiveness of minimising costs					Private sector operated models indicate lower producer and handling fees and therefore a more efficient model
Control / Influence over Scheme Admin					Public sector options give greater scope for control on how scheme administrator is run
Achieving Industry Buy-in					Private sector options have greater control over production/retail so can influence.
Regulatory					It is expected the regulatory model will generally be consistent across the options although under a public sector option this is not constrained by classification considerations.
Impact to SG					Risk is mitigated through transfer to Private Sector.
Fraud Prevention					Private sector have greater control over labelling to minimise potential fraud.
Realising additional benefits					Public sector has greater ability to influence key decisions for benefit of additional benefits although it is expected an efficient private sector model would still result in additional benefits.
Budgetary control					Private sector classification mitigates the risk of the variability in budgetary implications of the scheme which under the Public Sector options will require ongoing management and monitoring.

Source: Scottish Government Analysis

3.7 Preferred Delivery Options

- 3.67 The process of choosing a delivery model for the DRS will necessarily involve a process of an ‘informed trade-off’, whereby Scottish Ministers are able to accurately benchmark their aspirations around influence, risk, timeframe and efficiency against a range of feasible models.
- 3.68 The decision-making process also needs to be flexible going-forward and able to react quickly and efficiently to future events. For example, the recommendation to move forward with a process of ‘inward investment’, using existing Scottish reprocessors, would need to be revisited if market sounding indicated a lack of appetite from these core stakeholders. Likewise, a robust market-sounding process would be essential to confirm levels of industry appetite for the proposed procurement under a private sector led non-profit model.
- 3.69 Work performed would indicate that of the four delivery models considered it is Option 2 – a Non-Profit, private sector owned/operated model – that best aligns with Scottish Ministers’ aspirations for the scheme. Specifically, this model:
- Has recent precedent, with a number of recent European schemes functioning effectively from a privately operated, non-Profit model.
 - Maximises scope for buy-in from the private sector, with producers and retailers indicating through consultation this would be their preferred approach. Ownership by producers will also incentivise efficiency, as they are the organisations responsible for any shortfall in scheme finance.
 - Minimises requirement for public sector monitoring/management of performance against budget. However, the Scottish Government should still ensure robust systems of engagement with its private sector partner, given the strategic importance of the scheme.
 - Minimises levels of operational and financial risk exposure for the Scottish Government.
- 3.70 The private sector model would, however, potentially restrict the achievement of wider benefits from the scheme that might better be achieved under a public sector model. This emphasises the importance of the Scottish Government implementing a robust and flexible regulatory regime to drive out these benefits, whilst still ensuring a private sector scheme classification.

3.7.1 Procurement and State Aid

- 3.71 The approach to achieving the preferred scheme and delivery route is being developed as part of the FBC Stage 2. An achievable approach will be a pre-requisite for implementation of a private sector classified scheme.
- 3.72 In framing the procurement approach, the Scottish Government will also need to test against relevant state aid provisions, to ensure these do not prevent or delay the go-to-market approach.

4 FINANCIAL CASE

The key parameters and findings from the Financial Case of the Full Business Case (FBC) Stage 1 are summarised below.

Key parameters:

- The Financial Case is developed and reflected only from the Scheme Administrator's perspective.
- The commercial structure adopted for the Scheme Administrator is based on the delivery model Option 2 as outlined in the Commercial Case (100% privately-owned non-profit Scheme Administrator). Counting and bulking centres are procured by the Scheme Administrator. Logistics are outsourced. Reverse Vending Machines (RVMs) are procured by retailers and reimbursed by the Scheme Administrator through the handling fee.
- The Financial Case has adopted a similar treatment of deposit inflows and outflows as the Norwegian deposit return scheme, whereby the net benefit of these flows i.e. the value of unredeemed deposits, can be recognised as revenue in the profit and loss accounts of the Scheme Administrator and applied against scheme expenses.
- The recognition of this revenue is only enabled after sufficient evidence is collected over a period of time (for modelling purposes, from Year 0 to Year 5 inclusive) to establish an appropriate assumption around the volume of deposits that are actually unredeemed in any given period. As a result, the scheme is considered to be in steady state operation from Year 6 onwards.
- The financial forecast and associated financial statements are developed across a ten-year period which comprises the 'Observatory Period' (Year 0 to Year 5) and steady state operations (Year 6 to Year 9).

Key findings:

- At this stage, a number of assumptions have been made that the ultimate Scheme Administrator has the ability to determine an alternative position. A key assumption is the non-recognition of accrued cash as unredeemed deposit revenue in the profit and loss accounts until Year 6 onwards. In practice, the observatory period will be dictated by the volume and quality of evidence the Scheme Administrator is able to collate in the initial years of the scheme in order to provide sufficient comfort to auditors that a reasonable assumption with respect to the volume of deposits has been made.
- In addition, the financial modelling has assumed that this accrued cash balance (approximately £190 million) remains within the scheme across the steady state. However, the Scheme Administrator may choose to use this in alternative ways e.g. to be applied to scheme expenses, thereby offsetting producer fees or to fund future borrowing requirements.

- Through detailed consultation in the next stage of business planning, these alternative options will be explored to understand the implications to both the forecast revenue and costs of the scheme.

Under the current modelled assumptions, which are outlined in tabular form in the first section of this chapter:

- The direct operational costs of the Scheme Administrator under the preferred scheme design includes a handling fee and logistics costs and, at an average of £74.7 million a year, is consistent across the Observatory Period and steady state with an initial ramp-up of costs between Year 0 and Year 1.
- The financial modelling demonstrates that during steady state operations, the direct operational cost base will be funded by income from unredeemed deposits (42%) and sale of materials (26%) with the balance from the producer fee (32%). Until this point, the producer fee reflects 71% of the revenue base with sale of materials attributing 29%.
- The indicative producer fee during the observatory period equates to £48.4 million or 3.3p per container which is expected to reduce to £25.9 million or 1.5p per container during steady state operations. At this stage, the producer fee is calculated on an overall scheme basis. However, a producer fee by material type will be derived by the Scheme Administrator. Indicative figures will be developed in consultation with the private sector during the next stage of business planning.
- The overall investment required by the Scheme Administrator is an upfront capital injection of £27.6 million. The investment will be used to acquire and fit out facilities with counting and bulking equipment. The funding of the facilities is expected to be 100% debt-financed and therefore requires no upfront capital contribution from the public sector. The cost of this debt service is passed through to producers through the producer fee as part of Extended Producer Responsibility (EPR).
- Sensitivity analysis demonstrates that the producer fee is sensitive to changes in the handling fee, sale of materials revenue and the logistics fee.

4.1 Introduction

- 4.0 The purpose of this section is to set out the forecast financial implications of delivering the preferred scheme design (as set out in the Socio-Economic Case) under the proposed structure (as described in the Commercial Case). As a result, the Financial Case is developed to reflect only the perspective of the Scheme Administrator, who will be responsible for the financial management and execution of the scheme.

- 4.1 The Financial Case outlines the key financial assumptions underpinning the operations of the Scheme Administrator and demonstrates the indicative financial position through the development of financial statements (profit and loss, balance sheet and cash flow statements) over a ten-year period. Overall, the Financial Case presents a view of the key revenue streams, capital investment and on-going costs required for delivery of the scheme in order to conclude on the affordability of the preferred scheme design.

4.2 Background

- 4.2 The Full Business Case (FBC) is based on the preferred scheme design as outlined in the Commercial Case.
- 4.3 Approval of the FBC Stage 1 (this document) and FBC Stage 2 (next stage) and the proposed final scheme design, will enable the progression of the necessary legislative and regulatory requirements. Therein, implementation of the preferred scheme design will be driven by the controls and framework outlined in the Management Case.
- 4.4 This FBC also identifies the on-going necessary capital and revenue expenditure associated with the Scheme Administrator. These figures are, however, still pre-market i.e. the figures are not informed by a competitive tendering exercise. It is intended that these will help to inform the development of a business plan for the Scheme Administrator, as part of FBC Stage 2.

4.3 Financial Modelling Assumptions

- 4.5 The FBC is based on the latest assumptions available. In the development of this document there has been consultation with various DRS schemes in other jurisdictions to leverage their experience and insights to both determine and benchmark the current cost and income assumptions underlying the Financial Case. Detailed consultation will be conducted on the final preferred scheme design with local authorities and private sector stakeholders in order to validate the modelled assumptions as part of detailed business and implementation planning.
- 4.6 The financial plans will be updated once the detailed business planning exercise commences (FBC Stage 2).
- 4.7 Table 27 sets out the key assumptions and methodology used in the financial modelling:

Table 27: Financial Modelling Key Assumptions

Area	Sub-Heading	Description
Cost base	2018/19 forecast outturn	Cost assumptions have been developed in 2018/19 which are escalated to the commencement of the scheme.
Period modelled	Ten years (2019/20 to 2028/29 inclusive)	<p>The financial model has been developed over a ten-year annual basis whereby Year 0 (2019/2020) reflects the year directly before the scheme is launched and Years 1-9 reflect the forecast financial position of the Scheme Administrator following launch on 1 April 2020. It should be noted that the date of scheme launch is a modelling assumption used to undertake the investment appraisal and may in practice vary in accordance with ministerial approval and business and implementation planning.</p> <p>The rationale for modelling one year prior to scheme launch is to reflect the revenues and expenses expected to be incurred by the Scheme Administrator in establishing the scheme to correctly reflect affordability.</p> <p>The revenue and cost base modelled across Year 0 to Year 1 reflects a start-up period where variability is expected in revenues and costs as the Scheme Administrator becomes established and operations achieve a steady state (modelled from Year 6 to Year 9). In the start-up phase, scheme revenues are heavily driven by the producer fee and sale of materials revenue whilst costs ramp-up as capital investment activity occurs and operational functions are established and reach an efficient run rate.</p> <p>As outlined in <i>Cash Inflows/Outflows</i> below, Year 6 to Year 9 is considered the true reflection of steady state operations as up to this point, the Scheme Administrator will not recognise all available cash as revenue on the profit and loss account. Over the course of Year 0 to Year 5, referred to as the Observatory Period, the Scheme Administrator will be collecting evidence on consumer behaviour to support the establishment of an assumption that reflects the amount of deposits that are never to be redeemed in a given period, and therefore can be recognised as revenue.</p>
Deposit level	20p	Under the preferred scheme design, the deposit level is set at 20p . It is assumed to be constant across the entire modelled period and therefore drops in value in real terms as a result of inflation.
Target recycling rate (TRR)	90%	<p>Under the preferred scheme design, the annual target recycling rate is set at 90%. That is, it is assumed that of all eligible DRS material in the scheme, 90% will be returned and a 20p deposit redeemed.</p> <p>The model applies a ramp-up assumption to demonstrate performance against the target in the initial years of the scheme.</p>

Cash inflows and outflows	Deposits in/ Deposits out	<p>As outlined in the Commercial Case, the treatment of the deposits has been modelled based on the Norwegian DRS scheme. A key factor of this scheme is that the Scheme Administrator is treated as operating in a principal capacity in respect of deposit inflows and outflows, as compared to an agency capacity. The difference is that as a principal the Scheme Administrator will recognise the deposits as revenue and expenditure in its profit and loss account, whereas an agent would be responsible for managing the collection and disbursement of the deposits, but they would not be recognised as revenue and expenditure in the profit and loss account. The rationale for the principal capacity is that there is a clear distinction of receipts in (Scheme Administrator and producers) and payments out (Scheme Administrator and retailers).</p> <ul style="list-style-type: none"> • Deposits In (Revenue) - Producers are required to provide a report to the Scheme Administrator at an agreed periodicity, typically monthly, outlining the number of containers that have been sold to wholesalers in this period. The Scheme Administrator will invoice the producers for the relevant amount based on the report. • Deposits Out (Expenditure) - Retailers will in the first instance provide consumers with their deposit refund for redeemed DRS material. Following this event, they will invoice the Scheme Administrator at an agreed periodicity, for reimbursement of deposits paid. <p>In any given period, it is possible that the value of deposits paid into the Scheme Administrator may exceed the value of deposits that are redeemed. Based on the Norwegian DRS scheme (and DRS schemes in other jurisdictions), the Scheme Administrator is in principle able to recognise and, therefore, obtain the net benefit between the revenue and expenditure in relation to the deposits (referred to in this Financial Case as unredeemed deposits). The unredeemed deposits can then be used to partially fund the scheme expenses. <i>See next section for the assumptions underpinning how and when unredeemed deposits can be recognised by the Scheme Administrator.</i></p>
Income	Unredeemed deposits	<p>As outlined above, unredeemed deposits arise where a deposit has been paid to the Scheme Administrator by the producer on an eligible container, but the container has not been (and will not be) returned to a</p>

		<p>retailer by a consumer and, therefore, the deposit value is not paid out of the scheme.</p> <p>Under this circumstance, the Scheme Administrator is (subject to the appropriate sign-off from their external auditor) able to recognise the net benefit as 20p per unredeemed container per period.</p> <p>In practice, the Scheme Administrator will need to make a determination on the following two elements in order to ascertain the total net benefit from unredeemed deposits:</p> <ol style="list-style-type: none"> 1. The volume of deposits that will be classified as unredeemed deposits and therefore can be used to offset scheme expenses 2. The timing from which the Scheme Administrator can provide sufficient evidence to allow audit sign-off for the recognition of the unredeemed deposits in the profit and loss account. <p>In respect of Item 1, the Scheme Administrator will need to collect evidence of the volume of deposits that are not redeemed over a sufficient period of time in order to develop a commercial assumption on the appropriate amount to be deemed 'unredeemable'.</p> <p>For modelling purposes, the value of unredeemed deposit revenue is calculated as 20p multiplied by the volume of unredeemed containers per period derived in correlation to the target recycling rate i.e. where the TRR is 90%, the number of unredeemed containers is expected to be 10% of all containers in the DRS.</p> <p>In respect of Item 2, the sufficient period of time over which this assessment should be made will be a matter for justification by the Scheme Administrator based on the quality and volume of evidence that is collected. For modelling purposes, it is assumed that a five-year Observatory Period will be required to enable the development of the evidence base to satisfy auditors. Unredeemed deposits will therefore be recognised from Year 6 to Year 9 (the steady state period) in the profit and loss account.</p>
	Sale of material	<p>The Scheme Administrator has the ability to sell eligible DRS material that has been returned through the scheme. The modelling assumes that 97% of eligible DRS material that is returned is sold.</p> <p>100% of returned material is not assumed to be saleable based on consultation with existing schemes in other jurisdictions who have indicated that approximately 2-3% of material may be damaged or not of saleable quality as it passes through the supply chain i.e. glass bottles may be broken during sorting. The model applies a £/tonne rate to the volume of returned material to calculate the total revenue. The</p>

		<p>rate assumptions are applied at a material level i.e. PET, aluminium/steel, glass (flint), glass (brown) and glass (green) to accurately reflect the relativity of market rates. Whilst it is acknowledged that aluminium and steel prices vary in the market, the two materials have been aggregated in the financial modelling and a revenue rate closer to market rates for aluminium has been adopted as steel material comprises only 1% of the forecast volume. The £/tonne rate per material is outlined below:</p> <table><tr><th>Material type</th><th>Revenue rate (£/tonne)</th></tr><tr><td>PET</td><td>£200</td></tr><tr><td>Aluminium and steel cans</td><td>£1,300</td></tr><tr><td>Glass (flint)</td><td>£17</td></tr><tr><td>Glass (green)</td><td>£6</td></tr><tr><td>Glass (brown)</td><td>£12</td></tr></table> <p>The rates adopted for modelling purposes are based on a survey of spot rates available for each material type.</p> <p>The model also has the ability to apply a sensitivity to the relevant rates to reflect the volatility of material prices in both domestic and international markets.</p>	Material type	Revenue rate (£/tonne)	PET	£200	Aluminium and steel cans	£1,300	Glass (flint)	£17	Glass (green)	£6	Glass (brown)	£12
Material type	Revenue rate (£/tonne)													
PET	£200													
Aluminium and steel cans	£1,300													
Glass (flint)	£17													
Glass (green)	£6													
Glass (brown)	£12													
	Producer fee	<p>As a result of the Extended Producer Responsibility (EPR) nature of the scheme, the onus is on producers of the eligible DRS material to support the efficient establishment (including set-up costs) and financial management of the scheme. The producer fee, which is recognised by the Scheme Administrator as revenue, is set on a cost-recovery basis. The fee will vary but is calculated each period (in practice, monthly) and should offset all scheme expenses not recovered by other revenue streams. This includes direct operating costs and debt service required to fund upfront capital.</p> <p>Based on the current forecast, the following contributions are required from producers across the start-up and steady state operations of the scheme:</p> <ol style="list-style-type: none">1. Start-up period (Year 0 to Year 5) - Producer fee 3.3p per container, or on average £51 million a year, as a result of being unable to recognise the benefit of ‘never to be redeemed’ deposits until Year 62. Steady-state period (Year 6 to Year 9) – Producer fee 1.5p per container, or on average £30 million a year												
	Other	<p>The Scheme Administrator will also be able to generate revenue through interest earned on cash balances which is assumed at a rate of 1% per annum.</p>												
Costs	Workforce	<p>Workforce costs comprise a lean workforce required to execute the functions of the Scheme Administrator and a workforce to operate the counting and bulking centre facilities.</p>												

		<p>Following establishment of the scheme, the workforce costs for both system administration and counting and bulking centre operation equate to an average of £3.2 million a year.</p> <p>The workforce cost has been determined based on a high-level assessment of staffing requirements based on consultation with existing schemes in other jurisdictions.</p>
	Property	<p>The economic modelling has indicated that the supply of throughput in the scheme could be managed by the establishment of counting centres which comprise both a bulking point and counting apparatus at each facility. This assumption has been adopted for financial modelling. However, in practice the requirement and timing will be determined by the Scheme Administrator based on property availability and suitability to support the functions of the DRS. Properties are assumed to be acquired in Year 0 where construction of each facility is then completed before commencement of the scheme in Year 1. Properties and related equipment are depreciated on a straight-line basis for the term of their respective useful life as outlined below:</p> <p>Buildings – 25 years Counting apparatus – seven years Technology – three years See <i>Capital and Revenue Requirements</i> for further details.</p>
	Logistics	<p>As currently modelled, logistics costs in the steady state period reflect approximately 21% of direct operating expenses.</p> <p>A logistics contract is expected to be entered into for the provision of pickup and delivery services from material return points across the network i.e. pickup from retailers and delivery to the relevant counting centre facility.</p> <p>The costs are forecast by applying an estimated £/tonne rate multiplied by the relevant volume of returned material. Two rates are used to distinguish material that is collected from an automatic return point i.e. (i) material that is compacted through an RVM or (ii) a manual return point where material is collected and stored manually prior to pick-up. It is assumed that 85% of all material is collected through an automatic return point whilst 15% is manually handled.</p> <p>As a result, the financial modelling forecasts an average logistics fee of £16.5 million a year in steady state, comprising the following breakdown: Automatic handling - £12.9 million a year. Manual handling - £3.6 million a year.</p> <p>The rates underpinning the forecast are pre-commercial negotiations and do not assume any route optimisation factors and as a result may vary</p>

		upon detailed consultation and negotiation with suppliers.
	Cost of fraud	<p>Evidence from established jurisdictions indicates that a level of fraud should be anticipated within the scheme.</p> <p>The fraud can occur in a number of ways. Some examples include:</p> <ol style="list-style-type: none"> 1. Ineligible materials are accepted manually by retailers and deposits are paid. However, material is ineligible for sale and/or potentially contaminates eligible sale material. 2. Ineligible materials are accepted through the automatic RVM and deposits are paid. However, material is ineligible for sale and/or potentially contaminates eligible sale material. 3. Illegally manipulating/tampering with RVMs to claim additional deposits for the same material. <p>Ineligible materials can be containers trafficked from outside the jurisdiction of the scheme, or alternatively, locally-produced containers that are made of material that is not included within the remit of scheme i.e. HDPE.</p> <p>The financial implications of the various types of fraud can include a decrease in unredeemed deposits revenue, a decrease in sale of materials revenue and potentially an increase in handling fees due to the introduction of additional material into the DRS eco-system.</p> <p>The model assumes that, in most instances, the risk of this expense sits with the Scheme Administrator and as a result adopts an expense factor associated with fraudulent behaviour as 20p multiplied by 1.5% of the number of containers. 1.5% has been adopted based on the experience of existing schemes in other jurisdictions. While it is anticipated that fraudulent activity will be monitored and managed by the Scheme Administrator and the related regulatory framework, the model holds this assumption constant across the modelled period.</p>
	Communications	<p>It is recognised that a critical success factor to achieving the scheme's objectives is effective communication across various groups of stakeholders including producers, retailers and consumers.</p> <p>As a result, the Financial Case provides an upfront allowance for communications expenditure equating to £1 million in Year 0 which modulates to approximately £400k a year upon scheme commencement.</p>
	Handling fee	As currently modelled, the handling fee in the steady state period is on average £50.6 million a year and reflects the largest scheme expense at

		<p>approximately 65% of the direct operating cost base.</p> <p>The handling fee intends to compensate retailers for their role in accepting and storing returned material until it is collected by the scheme logistics partner. The handling fee will vary depending on whether the retailer manually processes and stores material or automatically does this through the use of an RVM. Under the preferred scheme design, four types of return points are modelled⁵³:</p> <p>Return Point 1 – Return to Hospitality Restaurants and Cafes (HoReCa) – Closed loop (manual handling)</p> <p>Return Point 2 – Return to HoReCa – Open loop (manual handling)</p> <p>Return Point 3 – Return to Retail (automatic handling)</p> <p>Return Point 4 – Return to Retail (manual handling)</p> <p>The handling fee is calculated by forecasting the costs expected to be incurred by retailers in accepting and storing returned material, and considers this cost against the forecast of material expected to flow through the particular return point, to calculate a £/container rate that is then multiplied by the total material.</p> <p>The cost base that forms the numerator in the above methodology will vary for manual vs automatic handling processes. For example, the handling fee for Return Point 3 will be calculated by estimating the establishment and run costs of installing an RVM(s), in addition to compensating the retailer for the value of lost retail space and lost staff time.</p> <p>The average handling fee a year is estimated as follows:</p> <p>Automatic handling return point (Return Point 3): 3.1p/container</p> <p>Manual handling return points (weighted average across Return Points 1, 2 and 4): 1.5p/container</p>
Corporate Structure	Not for profit (NFP)	The model is developed in accordance with the Commercial Case that identified a not-for-profit corporate structure as the preferred delivery route.
Ownership	Private sector	<p>The Scheme Administrator is expected to comprise various private sector participants that are likely to establish a Special Purpose Vehicle (SPV)/Independent entity to execute the objectives of the scheme.</p> <p>The key financial implications are:</p> <ol style="list-style-type: none"> 1. Debt is expected to be financed at commercial rates 2. There are no affordability/public sector budget implications

⁵³ Refer to the Socio-Economic Case for a detailed breakdown and definition of the configuration of each return point that has been modelled

Tax	Corporation Tax	The vehicle is expected to be exempt from Corporation Tax as a result of the not-for-profit status.
	VAT	The goods and services administered by the scheme are expected to be exempt from VAT as a result of the not-for-profit status.
	Other	PAYE tax and National Insurance contributions are estimated at 20% of the salary cost base and have been built into and reflected in the workforce cost estimates.
Assets	Counting centre buildings and equipment	<p>An upfront capital investment of approximately £27.6 million is required in order to fund the acquisition and establishment of counting centre facilities. The capital investment comprises three asset classes which are considered within the forecast:</p> <p>Asset Class 1 – Counting centre buildings (useful life: 25 years)</p> <p>Asset Class 2 – Counting centre apparatus (useful life: 7 years)</p> <p>Asset Class 3 – Scheme administrator equipment (software) (useful life: 3 years)</p> <p>Replacement capital expenditure of approximately £7.5 million is expected in Year 8 of the operating scheme in order to replace the counting centre apparatus at each facility which has a useful life of seven years (Asset Class 2). This is expected to be funded through available cash balances.</p> <p>A replacement of scheme administration software is not anticipated as a capital investment in the modelled period.</p> <p>The upfront capital investment is expected to be 100% debt-financed at a commercial rate of 2% (see <i>Capital and Financing</i> for further details) whilst replacement capital expenditure is expected to be funded through available cash balances.</p> <p>All assets created are assumed to be recognised on the balance sheet of the Scheme Administrator and be depreciated over their useful life in accordance with the straight-line depreciation method.</p> <p>It is assumed that retailers operating automatic return points will self-fund the acquisition/lease of RVMs used in compliance with their obligations under the scheme. As such, no capital investment is required by the Scheme Administrator for this equipment.</p>
Working Capital	Debtor days Creditor days	30 days

4.4 Capital and Revenue Requirements

4.4.1 Introduction

4.8 As set out in the Commercial Case and above, the expectation is that the DRS will be delivered by way of a private sector not-for-profit vehicle. On this assumption,

there will be no direct capital or revenue budgetary impacts to the public sector budget.

- 4.9 As such, the forecast capital costs and revenue costs outlined below are expected to be incurred by the Scheme Administrator in delivering the DRS.

4.4.2 Capital Investment

- 4.10 The capital costs associated with delivery of the final scheme design have been estimated based on information from various sources including consultation with existing schemes in other jurisdictions, preliminary studies commissioned by Zero Waste Scotland and the Scottish Government and publicly available information.
- 4.11 The upfront capital requirement for the Scheme Administrator is estimated to be £27.6 million in Year 0.
- 4.12 Table 33 sets out the elements of capital expenditure required, the estimated costs, and the basis of these costs.
- 4.13 As outlined under section 4.3, it is assumed that retailers operating automatic return points will self-fund the acquisition/lease of RVMs. As such, no upfront capital investment is required by the Scheme Administrator for this equipment. The economic modelling estimates that 3,100 RVMs will be operational within the network of participating retailers. The Scheme Administrator will offset the costs incurred by retailers through the handling fee (see Table 28 for further detail).

Table 28: Scheme Administrator Initial Capital Investment Requirements

Element	Cost (£ million)	Description
Counting and bulking centre building	£20.9 million	<p>For the purposes of modelling, it has been assumed that industrial facilities will be required with a combined function of bulking and counting of material.</p> <p>Reflecting a conservative case, it has been assumed that the Scheme Administrator will purchase all facilities upfront and manage them, directly.</p> <p>In practice, the Scheme Administrator may be able to reduce the upfront capital investment by staggering the acquisition of these facilities as scheme operations ramp up and surplus cash funds are available or, alternatively, lease these facilities or pay a network operator fee depending on availability and suitability of infrastructure across the Scottish network. The associated costs of alternative options will be considered in further detail during the business planning phase.</p>

Counting centre equipment	£6.4 million	Each facility will be fitted out with counting and sorting machines. As a result, the estimated cost per facility is £1.6 million. This equipment is expected to be replaced following the end of its useful life of seven years at an increased cost of £7.5 million reflecting inflation of 2%. Similar to above, there may be alternative options for mitigating part or all of the upfront capital investment requirements through leasing equipment or paying a network operator fee. The associated costs of alternative options will be considered in further detail during the business planning phase.
IT infrastructure	£0.3 million	It is expected that £0.3 million of upfront capital expenditure will be required to establish the Scheme Administrator's IT infrastructure.
Total	£27.6 million	

4.4.3 Capital Financing

4.14 The funding for the capital elements will be developed as part of the business planning process, but for the purpose of this Financial Case a conservative position has been adopted and it has been assumed that upfront capital elements will be funded 100% through commercial borrowing. The business planning process will consider whether through-life capital requirements will be funded by excess surplus, commercial borrowings or leases.

4.15 Table 29 below demonstrates the estimated finance required and the financing assumptions adopted in the Financial Case.

Table 29: Scheme Administrator Initial Capital Investment Financing

Element	Cost (£ million)	Delivery Route / Funding
Counting and bulking centre building	£20.9 million	It is assumed that the private sector participants in the industry-based group will comprise beverage and retail industry members. As a result, a proxy of the assumed cost of capital that could be accessed by these participants in the commercial borrowing sector has been adopted. This all-in cost of capital rate is 2% a year and is assumed to be secured against the assets of the scheme. As identified above there may be alternative options for either reducing the upfront capital investment requirement (staggering of investment) or financing
IT Infrastructure	£0.3 million	
Counting Centre Equipment	£6.4 million	
Total	£27.6 million	

		through alternative means (leasing, producer loan, and cash surpluses) and these will be considered further in the FBC Stage 2.
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- 4.16 Should the business planning process identify alternative funding mechanisms, with more competitive interest rates, then this would clearly have a positive impact by reducing overall costs of the scheme.

4.4.4 Optimism Bias

- 4.17 As the project has evolved, the value of the optimism bias has been utilised to review any proposed scheme designs in line with HMT Treasury guidance. The variation created by optimism bias has been held constant across the Socio-Economic Case and Financial Case during the development of this document as market testing has not formally been conducted in respect of key revenue and cost drivers.
- 4.18 Notwithstanding the above, a contingency allowance has been reflected in the financial modelling by the use of conservative estimates i.e. no assumption of cost optimisation over time and methodologies adopted such as assuming all upfront financing is 100% debt funded. As a result, this allows decision making to move forward with confidence in respect of the quality and appropriateness of the design and the cost planning.

4.4.5 Revenue Requirements

- 4.19 The costs associated with the Scheme Administrator can be summarised into two key elements – the **direct operational costs** (including the handling fee that is paid to the retailers for undertaking the collection of the materials) and **non-operational costs**.
- 4.20 As part of ensuring the ongoing success of the scheme, it is envisaged that a regulatory framework will be established to mandate the key obligations of the Scheme Administrator. In addition, a regulatory body will need to be established in order to manage this regulatory function. On this assumption, there will a direct capital or revenue budgetary impact to the public sector. However, a regulatory compliance fee has been assumed within the direct operational cost base of the Scheme Administrator to offset this expense.

Costs of Scheme Administrator

- 4.21 The categories comprising the **direct operational costs** of the Scheme Administrator have been derived with reference to existing schemes in other jurisdictions and the preferred scheme design for Scotland.

4.22 A summary of the breakdown and proportionality of the direct operational costs is outlined in the diagram below (Figure 10), following which Table 30 outlines the detailed description underlying each specific element of the direct operating cost base and, in addition, the **non-operational costs** including depreciation and interest payable.

Figure 10: Breakdown of Scheme Administrator's Direct Operational Costs under Steady State

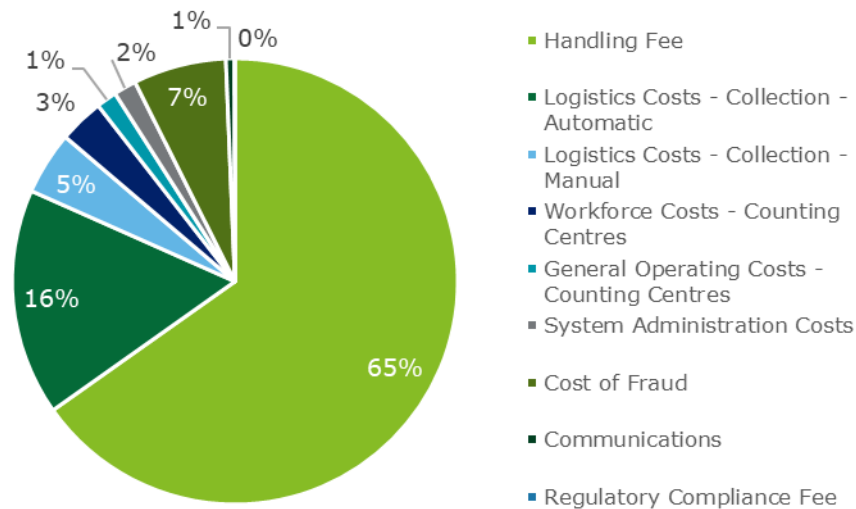


Table 30: Description of Scheme Administrator's Cost Elements

Note: averages outlined in the table reflect the average steady state cost of operations

Element	Average cost a year (£ million)	Description
Direct Operational Costs	£78.2 million	
Staffing		
System administration costs (Scheme Administrator)	£0.8 million	On average, workforce costs for the administration of the scheme are estimated at £790,000 a year. These costs comprise the personnel required to undertake the management and administrative functions of the scheme. However, it does not include the operational workforce required in the counting centres (<i>see below</i>). Whilst the mix of employees will be assigned during the business planning phase, the cost base assumes a 20% allowance for tax and National Insurance contributions across the workforce. 50% of this cost base is assumed to arise in Year 0 where recruitment of key personnel will be required to support the establishment of the scheme prior to launch in Year 1.
Workforce costs - counting centre	£2.5 million	The workforce employed across four counting centres is estimated to cost on average £2.5 million a year. Based on a high-level assessment of workforce requirements as informed by consultation with existing schemes in other jurisdictions, the workforce is expected to comprise supervisory and management staff, counting and sorting machinery specific staff,

		<p>administrative and general facility staff and other technical staff.</p> <p>Whilst the mix of employees responsible for scheme administration and counting centre management and operation will be assigned during the business planning phase, each cost base assumes a 20% allowance for tax and National Insurance contributions across the workforce.</p> <p>50% of this cost base is also assumed to arise in Year 0 where recruitment of key personnel will be required to support the establishment of the facilities prior to launch in Year 1 which will ramp up to full capacity in Year 1.</p>
<p>Ongoing operational costs</p> <p>System administration costs (Scheme Administrator)</p>	£0.5 million	<p>On average, ongoing operational costs of the Scheme Administrator are estimated at £500,000 a year.</p> <p>A detailed breakdown of the items assumed in this cost base can be found in the Socio-Economic Case. However, broadly the costs comprise general running expenses of the office facilities including rental, utilities and supplies.</p>
General operating costs - counting centre	£1.2 million	<p>Ongoing operational costs for the total number of counting centre facilities is estimated at an average of £1.2 million a year. Assuming an equivalent capacity and fit-out of each counting centre, this results in an average spend of approximately £300,000 a year per counting centre.</p> <p>This cost base comprises rental, utilities, supplies, cleaning and other ongoing costs.</p>
Logistics costs (both automatic and manual collection)	£16.5 million	<p>The logistics cost is derived by multiplying the volume of material in tonnes expected to flow through each of the return point configurations by a respective £/tonne rate. There are two rate variations based on whether material has been collected through an automatic return point or manual return point. The breakdown of the average annual logistics fee under steady state is as follows:</p> <ul style="list-style-type: none"> a) Logistics fee for collection of manually handled material (£3.6 million a year) b) Logistics fee for collection of automatically compacted material (£12.9 million a year) <p>Based on discussions with existing schemes in other jurisdictions, it is assumed that 85% of material that is collected flows through an automatic return point whilst only 15% is collected</p>

		from return points where material is manually handled and stored.
Communications	£0.5 million	<p>Communications and marketing are expected to be a recurrent expense for the Scheme Administrator in order to support successful scheme implementation.</p> <p>In Year 0, the communications expenses is estimated at £1 million to support development and delivery of educational material for initial circulation. However, the average cost of communications from Year 1 onwards is estimated to be £460,000 a year, reflecting a typical annual marketing cycle.</p>
Cost of fraud	£5.3 million	<p>The inclusion of an expense reflecting the cost of fraud is a conservative tool to understand the sensitivity of the scheme to the loss of revenue due to fraudulent behaviour.</p> <p>The cost methodology has been derived through consultation with other existing schemes which have advised that 1.5% of total deposits received is an indicative cost of fraud allowance. While it is difficult to predict if and how the Scottish scheme will experience similar levels of fraudulent behaviour as other jurisdictions, the scheme appears to be recurrently affordable despite the inclusion of this expense.</p> <p>In practice, it is expected that this allowance will vary and reduce from period to period as the Scheme Administrator will be responsible for actively monitoring and addressing fraudulent behaviour.</p>
Regulatory compliance fee	£0.3 million	<p>An average cost of £250,000 a year is estimated to reflect the regulatory compliance fee paid by the Scheme Administrator to the new regulatory body.</p> <p>An original estimate was provided during the development of the OBC which has been escalated based on the development of the scheme design and the application of inflation at 2%.</p>
Non-Operational Costs	£2.2m	
Depreciation	£1.8 million	<p>Depreciation is modelled on a straight-line basis on an initial capital investment of £27.6 million. The breakdown of the average depreciation forecast across the three asset classes outlined in section 4.3 is as follows:</p> <p>Asset Class 1 (buildings) - £0.8 million (useful life: 25 years)</p> <p>Asset Class 2 (equipment) - £0.9 million (useful life: 7 years)</p> <p>Asset Class 3 (software) - £0.1 million (useful life: 3 years)</p>

Interest Payable	£0.4 million	The average interest expense of £422,000 a year is calculated on the balance of the initial capital investment of £27.6 million which is assumed to be 100% commercially debt-financed at a rate of 2%, repayable over a ten-year term. Cost of capital assumptions are outlined in section 3.4.3.
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4.4.6 Handling Fees

4.23 The principle underlying the handling fee is to compensate retailers for their role in accepting and storing returned DRS material until it is collected by the logistics partner.

4.24 The modelling estimates the average annual handling fee to retailers across the network as £50.6 million a year.

4.25 In practice, the amount of the handling fee that is paid to each individual retailer will vary based on the volume of material that flows through their return point. However, the calculation methodology used to determine the £/container rate upon which the fee is calculated is consistent.

4.26 There are two elements that comprise the breakdown of the overall handling fee. The first element intends to reflect the estimated costs faced by retailers who process material automatically through the use of an RVM. The second element reflects the estimated costs faced by retailers who manually accept and store returned material.

4.27 As outlined in section 4.3, the preferred scheme design segments the two elements of the handling fee by building up the expected cost base of these retailers across various return point configurations. The expected type and collection configuration contemplated within the scheme modelling is:

- a) Return Point 1 – Return to HoReCa – Closed loop (manual handling)
- b) Return Point 2 – Return to HoReCa – Open loop (manual handling)
- c) Return Point 3 – Return to Retail (automatic handling)
- d) Return Point 4 – Return to Retail (manual handling)

4.28 For retailers that are classified under the Return Point 3 configuration, the handling fee has been calculated as 3.1p per container. To derive the handling fee paid to this segment, this container rate is then multiplied by 85% of the total volume of DRS material which is the volume expected to pass through this return point. This results in the value of the first component of the overall handling fee, an average fee of £47 million a year.

4.29 The residual £4 million a year comprises the handling fee to retailers across Return Points 1, 2 and 4 which are expected to manually handle 15% of the DRS material. Each return point has an individual £/container rate that is applied in the modelling. However, the weighted average handling fee across the three return points is 1.5p per container.

4.30 The cost base that is assumed for each return point operator comprises a number of cost categories. While the underlying values attributed to each cost category are yet to be tested formally in the market, they have been informed through preliminary consultation with relevant stakeholders and benchmarking against existing schemes in other jurisdictions. The cost categories included in the calculation per return point are outlined in Table 31 below.

Table 31: Handling Fee Cost Categories applicable per Return Point

Cost Category	Return Point 1 HoReCa - Closed loop (manual handling)	Return Point 2 HoReCa - Open loop (manual handling)	Return Point 3 Large retailers (auto handling)	Return Point 4 Small to medium retailers (manual handling)
Establishment costs Installation cost	N/A Note 1	N/A Note 1	✓ Note 2	N/A Note 1
Running costs RVM lease cost	N/A Note 1	N/A Note 1	✓ Note 2	N/A Note 1
Materials cost	✓ Note 3	✓ Note 3	N/A Note 4	✓ Note 3
Ongoing costs	✓ Note 3	✓ Note 3	N/A Note 4	✓ Note 3
Compensatory costs Lost retail space	N/A Note 5	✓ Note 7	✓ Note 6	✓ Note 7
Lost staff time	N/A Note 5	✓ Note 7	✓ Note 6	✓ Note 7

Note 1

As per the preferred scheme design, Return Points 1, 2 and 4 are assumed to manually handle and store returned DRS material. As a result, there are no RVMs expected to be leased and installed across these return points and no associated establishment cost. Economic modelling estimates that there will be

approximately 14,300 participating manual return point locations across the Scottish DRS network.

Note 2

Under the base case, retailers are assumed to lease all RVM equipment. This assumption is on the basis that retailer participation in the DRS is not core business and therefore assets utilised in the execution of these obligations are not likely to be acquired.

There are also ongoing circular economy benefits to leasing the equipment, including reduction of asset stranding and obsolescence risks.

While it is acknowledged that a number of retailers may choose to acquire the equipment where financially feasible, the drivers influencing this purchasing decision have not been tested formally with the market and as such, an assumption that all 3,100 units required across the network will be leased has been adopted.

As a result, the estimated leasing fee is derived by considering the expenses associated with operating an RVM including an allowance for depreciation and cost of capital, maintenance of the RVM, operating costs and insurance.

Note 3

It is assumed that retailers operating manual return points will be required to acquire materials to sort, label and store material appropriately prior to pick-up by the logistics partner.

Materials and ongoing costs are expected to comprise recycle-appropriate bags for storing returned material, labels and tags to indicate stored material, containers for collection prior to sorting and bagging, and writing materials among other miscellaneous items.

Note 4

Cost of materials and ongoing costs associated with an RVM are included within the leasing fee assumed per unit.

Note 5

Retailers classified under Return Point 1 are bars and restaurants that will not be required to accept DRS-eligible material that has not been sold on premise. As a result, these retailers will not be compensated for lost retail space and lost staff time, as they will only be required to accept material that would typically be handled/recycled in the usual course of their business notwithstanding the DRS.

Note 6

The value of retail space is estimated with respect to the number of RVM machines that are fitted out within each individual return point. For retailers operating automatic return points, this item is expected to reflect the largest cost driver within the handling fee cost base. As a result, the overall fee is sensitive to changes in this estimate.

Similarly, the estimate to be determined in valuing lost employee time relates to time spent interacting with the RVM i.e. emptying compacted material in preparation for collection. The assumptions adopted for both these estimates will need to be tested formally with relevant stakeholders as part of the business planning phase.

Note 7

The rationale behind compensating retailers for lost retail space and employee time is consistent across automatic and manual return point configurations. However, the value of compensation related to retail space is relatively reduced for manual return points as compared to automatic return points. This is because the amount of retail space expected to be displaced as part of accepting DRS material is related to manually storing these items prior to collection as compared to the space being displaced due to accommodating a single or multiple RVMs.

4.4.7 Revenue Funding

4.31 As outlined in the financial modelling assumptions section, there are three key sources of revenue associated with operation of the scheme; unredeemed deposit revenue, sale of materials revenue and the producer fee.

4.32 The first two sources of revenue are derived from the operations of the scheme and are typically impacted by performance against the target recycling rate and the volume and quality of recycled material within the scheme, respectively. The latter is a contribution required from producers in order to recover against the scheme expenses that are not offset by other revenue sources.

Operational revenues

4.33 The underlying assumptions comprising the estimated revenue forecast have been derived with reference to existing schemes in other jurisdictions and the preferred scheme design for Scotland.

4.34 A summary of the breakdown and proportionality of the scheme revenues across both the observatory period (Year 0 to Year 5) and under steady state operations (Year 6 to Year 9) is outlined in Figure 11 and Figure 12 below. The key variance between diagrams is the existence of unredeemed deposits in the latter, whereby it is expected that the Scheme Administrator has collated and demonstrated a sufficient base of evidence to support recognition of unredeemed deposit revenue for application in the scheme. Following these diagrams, Table 32 outlines the detailed description underlying each specific element of the operating revenue base and non-operating revenues including interest earned on the scheme's cash balance under steady state operations.

Figure 11: Breakdown of Scheme Administrator's Operating Revenue Sources Observatory Period

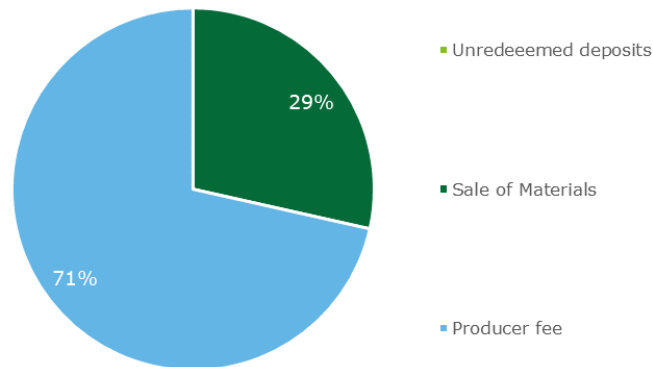


Figure 12: Breakdown of Scheme Administrator's Operating Revenue Sources Steady State

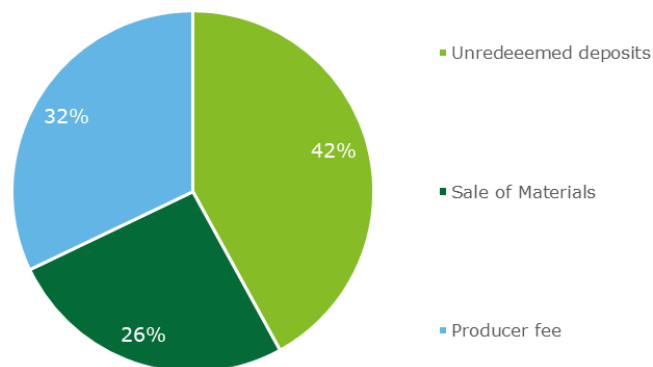


Table 32: Description of Scheme Administrator's Revenue Elements

Note: averages outlined in the table reflect the average steady state revenue

Element	Average Revenue a year (£ million)	Description
Operational Revenue	£80.8 million	
Unredeemed deposits	£33.9 million	At 42% of the revenue base under steady state operations, unredeemed deposit revenue reflects the Scheme Administrator's largest source of revenue, once recognised. Under the preferred scheme design, unredeemed deposits revenue is calculated as 10% of the total volume of DRS material multiplied by the deposit rate of 20p per unredeemed container per period. In accordance with the treatment of deposit inflows and outflows, under the Norwegian scheme, the DRS Scheme Administrator is only able to

		<p>recognise the net benefit of these scheme inflows/outflows as revenue on the profit and loss account once a sufficient base of evidence has been established to demonstrate the volume of containers deemed to be 'unredeemed' is reasonable, and this is approved by the Scheme Administrator's external auditor.</p> <p>For the purposes of modelling, it is assumed that a five-year observatory period will be sufficient to collate the base of evidence required and, therefore, the net benefit of deposits paid by producers and deposits paid to retailers is able to be recognised from Year 6 onwards.</p> <p><i>See Impact on Profit & Loss Account below for further detail.</i></p>																												
Sale of materials revenue	£20.9 million	<p>Sale of materials revenue is derived once returned DRS material received by the Scheme Administrator is sold onwards to relevant material markets.</p> <p>This revenue source is sensitive to the volatility of material markets and external prices. However, the model assumes the following rates which are based on a survey of market rates available in each material market:</p> <table><thead><tr><th>Material type</th><th>Revenue rate (£/tonne)</th></tr></thead><tbody><tr><td>PET</td><td>£200</td></tr><tr><td>Aluminium and steel cans</td><td>£1,300</td></tr><tr><td>Glass (flint)</td><td>£17</td></tr><tr><td>Glass (green)</td><td>£6</td></tr><tr><td>Glass (brown)</td><td>£12</td></tr></tbody></table> <p>The breakdown of total sale of materials revenue by material type is outlined below. The table demonstrates that aluminium (99% of volume) and steel (1% of volume) containers contribute significantly to this revenue representing more than 70% of the revenue base.</p> <table><thead><tr><th>Material type</th><th>Average Steady State revenue (£ million a year)</th></tr></thead><tbody><tr><td>PET</td><td>£4.7</td></tr><tr><td>Aluminium and steel cans</td><td>£14.7</td></tr><tr><td>Glass (Flint)</td><td>£1.0</td></tr><tr><td>Glass (Green)</td><td>£0.3</td></tr><tr><td>Glass (Brown)</td><td>£0.2</td></tr></tbody></table> <p>The average volume of materials by type is outlined in the table below:</p> <table><thead><tr><th>Material type</th><th>Average volume of materials (tonnes a year)</th></tr></thead><tbody><tr><td>PET</td><td>21,191</td></tr></tbody></table>	Material type	Revenue rate (£/tonne)	PET	£200	Aluminium and steel cans	£1,300	Glass (flint)	£17	Glass (green)	£6	Glass (brown)	£12	Material type	Average Steady State revenue (£ million a year)	PET	£4.7	Aluminium and steel cans	£14.7	Glass (Flint)	£1.0	Glass (Green)	£0.3	Glass (Brown)	£0.2	Material type	Average volume of materials (tonnes a year)	PET	21,191
Material type	Revenue rate (£/tonne)																													
PET	£200																													
Aluminium and steel cans	£1,300																													
Glass (flint)	£17																													
Glass (green)	£6																													
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Material type	Average Steady State revenue (£ million a year)																													
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Glass (Flint)	£1.0																													
Glass (Green)	£0.3																													
Glass (Brown)	£0.2																													
Material type	Average volume of materials (tonnes a year)																													
PET	21,191																													

		Aluminium and steel cans	11,121*
		Glass (flint)	56,813
		Glass (green)	48,036
		Glass (brown)	13,223
		*99% Aluminium	
Producer fee	£25.9 million	<p>As outlined in section 3.3, Extended Producer Responsibility places the onus on producers of eligible DRS material to support the efficient establishment and financial management of the scheme.</p> <p>As a result, the producer fee, which is recognised by the Scheme Administrator as revenue, is set on a cost-recovery basis and is intended to offset all operational expenses associated with the scheme including debt service.</p> <p>During the observatory period (Year 0 to Year 5) where the Scheme Administrator is not recognising the net benefit of unredeemed deposit revenue, the producer fee at £48.4 million a year is significantly higher than the contribution required under steady state operations (Year 6 to Year 9).</p> <p>Given the cost base outlined in section 3.4, the producer fee is calculated as an average of £25.9 million a year under steady state operations.</p> <p>While the producer fee is likely to vary period to period in practice, the methodology adopted in the model is consistent with existing schemes in other jurisdictions and upholds the cost-recovery principle.</p> <p>On a container basis, the average annual contribution required by producers is calculated as 3.3p per container during the observatory period and reduces to 1.5p per container once steady state operations are achieved.</p> <p>During the business planning phase, further information will be gathered in respect of the processing costs per material in order to derive a producer fee by material type.</p>	

4.5 Impact on Profit and Loss Account

- 4.35 The preferred option assumes a not-for-profit model whereby the entity can make surpluses, but these will not be distributable.
- 4.36 There are several important interdependencies between the producer fee, unredeemed deposits and handling fee. Summary profit and loss projections for a ten-year period from the initial set-up of the scheme through to the steady state operations are set out in Table 33.

4.37 A summary of the direct scheme expenses comprising gross margin are represented in the Figure 13 and Figure 14 below. These illustrate the financial implication of the Extended Producer Responsibility principle, which requires the producers to contribute to the scheme the costs of administration that are not offset by existing sources of revenue. On average, the scheme requires producers to contribute an average of £48.4 million a year or 3.3p per container to fund the direct operational costs of the scheme during the observatory period while this reduces significantly to an average of £25.9 million a year or 1.5p per container during steady state operations.

4.38 It should be noted that while the Scheme Administrator is unable to recognise the net benefit of unredeemed deposits during the observatory period, it will accumulate a large cash balance which can be observed below in the *Cash Flow Implications* section.

Figure 13: Summary of Average Annual Revenue and Expenditure of Scheme Administrator under Observatory Period (Year 0 to Year 5)

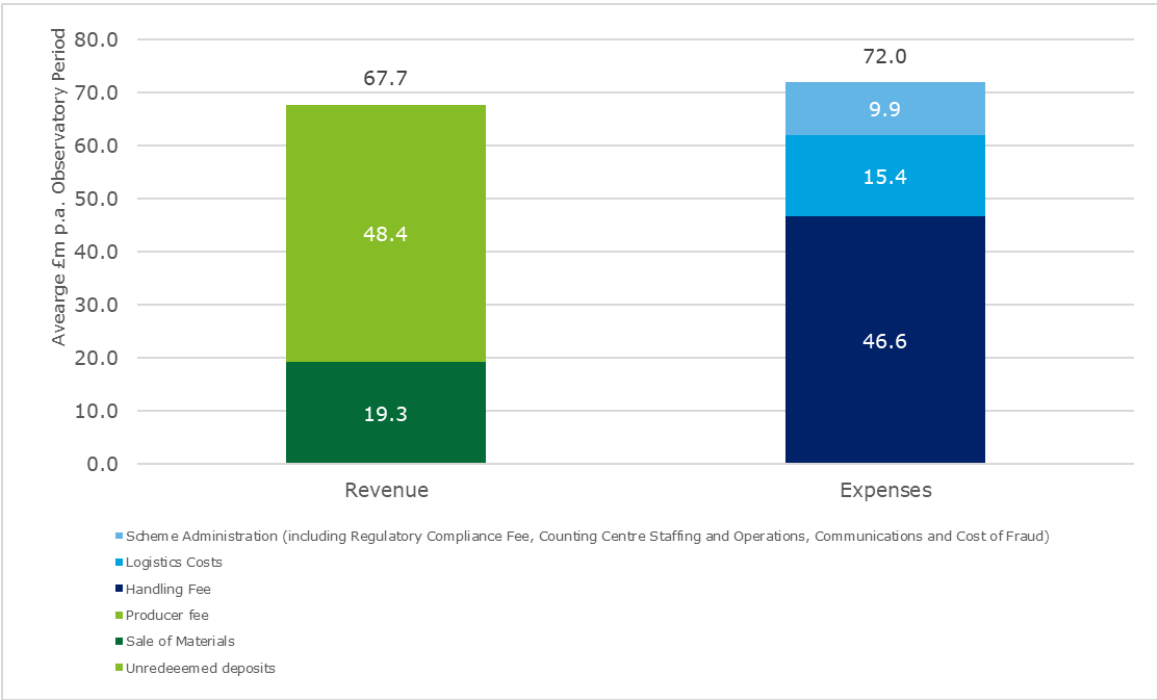
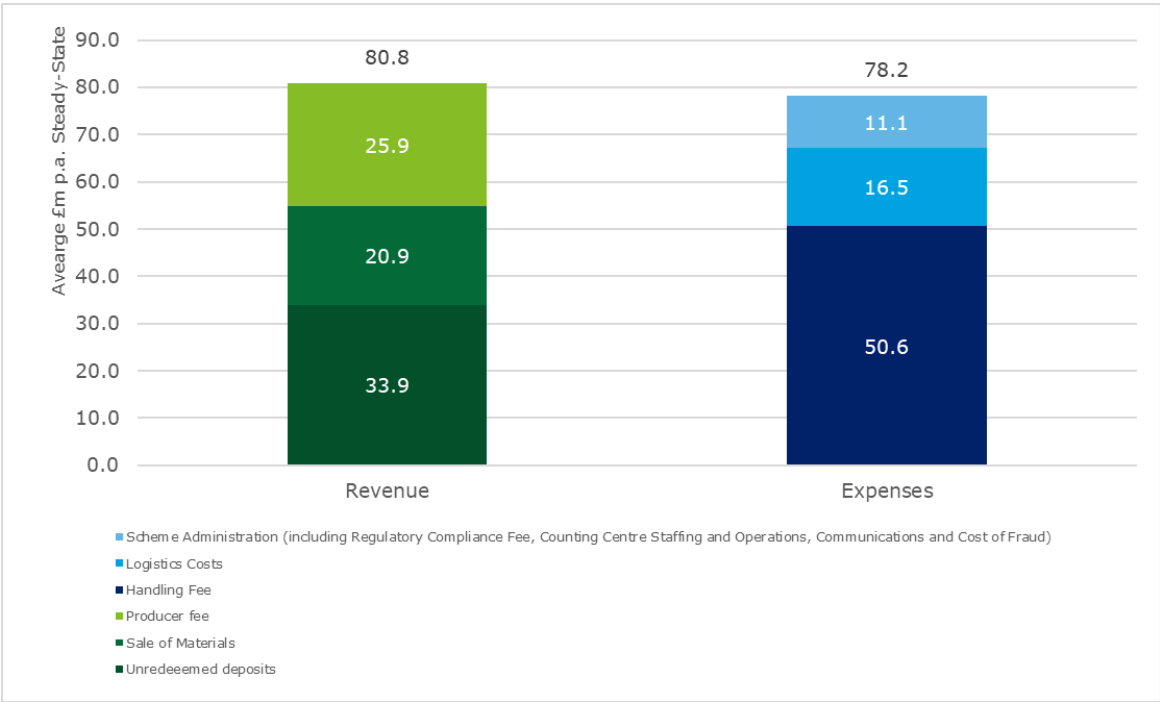


Figure 14: Summary of Average Annual Revenue and Expenditure of Scheme Administrator under Steady State (Year 6 to Year 9)



Note: the variance between total revenues and total expenditure reflects approximately £2 million of interest income which appears below the gross margin line, however, is included in the calculation of the producer fee to ensure all scheme income and expenses are reflected.

Table 33: Ten-Year Revenue and Expenditure Summary

£m (Nominal)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue										
Deposits Received from Producers	-	384.2	335.1	335.9	336.8	337.6	338.3	339.1	339.7	340.4
Sale of Materials	-	19.9	18.5	18.9	19.4	19.8	20.2	20.7	21.1	21.6
Producer Fee	5.8	59.6	55.1	55.9	56.6	57.4	24.4	25.5	25.7	28.1
Total Revenue	5.8	463.7	408.7	410.8	412.7	414.8	383.0	385.2	386.6	390.1
Expenses										
Deposits Unredeemed and Outstanding (Deposit Liability fund)	-	(55.7)	(33.5)	(33.6)	(33.7)	(33.8)	-	-	-	-
Deposits Paid to Retailers (Cash Reimbursement)	-	(328.5)	(301.6)	(302.3)	(303.1)	(303.8)	(304.5)	(305.1)	(305.8)	(306.3)
Handling Fee	-	(47.8)	(44.8)	(45.8)	(46.8)	(47.9)	(48.9)	(50.0)	(51.1)	(52.2)
Logistics Costs - Collection - Automatic	-	(13.0)	(11.4)	(11.7)	(12.0)	(12.2)	(12.5)	(12.8)	(13.1)	(13.3)
Logistics Costs - Collection - Manual	-	(3.6)	(3.2)	(3.3)	(3.3)	(3.4)	(3.5)	(3.6)	(3.6)	(3.7)
Workforce Costs - Counting Centres	(1.1)	(2.2)	(2.3)	(2.3)	(2.4)	(2.4)	(2.5)	(2.5)	(2.6)	(2.6)
General Operating Costs - Counting Centres	-	(1.0)	(1.0)	(1.1)	(1.1)	(1.1)	(1.1)	(1.2)	(1.2)	(1.2)
System Administration Costs	(0.4)	(1.1)	(1.1)	(1.2)	(1.2)	(1.2)	(1.2)	(1.3)	(1.3)	(1.3)
Cost of Fraud	-	(5.0)	(4.7)	(4.8)	(4.9)	(5.0)	(5.1)	(5.3)	(5.4)	(5.5)
Communications	(1.0)	(0.4)	(0.4)	(0.4)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Regulatory Compliance Fee	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Total Expenses	(2.7)	(458.8)	(404.3)	(406.7)	(409.1)	(411.5)	(380.1)	(382.4)	(384.8)	(387.0)
EBITDA	3.1	4.9	4.4	4.0	3.6	3.2	2.9	2.8	1.9	3.0
Depreciation	-	(1.9)	(1.9)	(1.9)	(1.7)	(1.7)	(1.7)	(1.7)	(0.8)	(1.9)
Interest paid	(0.6)	(0.5)	(0.4)	(0.4)	(0.3)	(0.3)	(0.2)	(0.2)	(0.1)	(0.1)
Interest received	-	(0.0)	0.5	0.9	1.3	1.6	2.0	2.0	2.0	2.0
EBT	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0
Tax	-	-	-	-	-	-	-	-	-	-
Profit after tax	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0

4.39 The key points arising from the profit and loss analysis:

1. Operational scheme costs are expected to ramp up between Year 0 and Year 1 in anticipation of Go-Live, including significant spend on campaigning efforts. As no income is received from deposits during Year 0, costs will need to be covered by the producer fee.

2. Deposits received in Year 1 are higher, as this includes the initial supply of containers that will stock the supply chain at the start of Year 1.
3. The producer fee is calculated to offset the expenses in operating the scheme, including debt service payments. On the assumption that the Scheme Administrator will be unable to recognise the benefit of 'never to be redeemed' deposits until Year 6, the producer fee is significantly higher from Year 1 to Year 5. The producer fee approximately halves in value once the Scheme Administrator can recognise the 'never to be redeemed deposits' impact. The forecast average fee for Year 0 to Year 5 is ~£48 million a year or 3.3p/container, for Year 6 to Year 9. This reduces to ~£26 million a year or 1.5p/container (which is considered to be the steady state position for the producer fee).
4. As identified above, the costs of operating the scheme need to be funded by the sale of materials and producer fee only in the early years as the Scheme Administrator builds a sufficient evidence base for inclusion of 'never to be redeemed deposits' in its profit and loss. A summary of the impact of the deposit flows and provision on the balance sheet that are recognised in the profit and loss are set out below:

<i>Deposits Received from Producers</i>	-	384.2	335.1	335.9	336.8	337.6	338.3	339.1	339.7	340.4
<i>Deposits unredeemed and outstanding (Deposit Liability fund)</i>	-	(55.7)	(33.5)	(33.6)	(33.7)	(33.8)	-	-	-	-
<i>Deposits paid to retailers (Cash)</i>	-	(328.5)	(301.6)	(302.3)	(303.1)	(303.8)	(304.5)	(305.1)	(305.8)	(306.3)
<i>Revenue recognised from Deposits</i>	-	-	-	-	-	-	33.8	33.9	34.0	34.0

5. The handling fee is currently set at 1.5p (manual) and 3.1p (auto) per container resulting in an average handling fee of approximately £48 million a year.
6. The Scheme Administrator builds up significant cash balances in first five years earning (1% a year) interest. Interest paid is in relation to the borrowing for the asset purchases in Year 0.
7. The producer fee is set to provide a profit after tax matched to the principal repayments on borrowing.

4.6 Impact on Balance Sheet

4.40 The proposed capital expenditure is predicted to have the following impact on the Scheme Administrator's balance sheet (see Table 34)

Table 34: Summary Balance Sheet

£m (Nominal)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Non Current Assets										
Property, plant & equipment	27.6	25.7	23.8	22.0	20.2	18.5	16.7	15.0	21.7	19.7
Total Non Current Assets	27.6	25.7	23.8	22.0	20.2	18.5	16.7	15.0	21.7	19.7
Current Assets										
Cash	(0.3)	52.6	89.8	125.3	160.8	196.3	200.8	202.6	196.0	197.8
Trade Receivables	0.5	38.2	33.7	33.9	33.9	34.2	31.6	31.8	31.8	32.1
Total Current Assets	0.2	90.8	123.5	159.1	194.7	230.5	232.4	234.3	227.8	230.0
Current Liabilities										
Trade Payables	(0.2)	(33.2)	(30.6)	(30.8)	(30.9)	(31.1)	(31.3)	(31.5)	(31.6)	(31.9)
Borrowing <1 year	(2.6)	(2.6)	(2.7)	(2.7)	(2.8)	(2.8)	(2.9)	(2.9)	(3.0)	-
Deposit Liability Fund	-	55.7	(89.2)	(122.8)	(156.5)	(190.2)	(190.2)	(190.2)	(190.2)	(190.2)
Total Current Liabilities	(2.8)	(91.7)	(122.6)	(156.4)	(190.3)	(224.3)	(224.6)	(224.8)	(225.0)	(222.3)
Non Current Liabilities										
Borrowing >1 year	(22.5)	(19.9)	(17.2)	(14.5)	(11.7)	(8.8)	(6.0)	(3.0)	-	-
Total Non Current Liabilities	(22.5)	(19.9)	(17.2)	(14.5)	(11.7)	(8.8)	(6.0)	(3.0)	-	-
Net Assets	2.5	5.1	7.7	10.4	13.1	15.9	18.7	21.6	24.6	27.6
Shareholders Equity										
Retained Earnings	(2.5)	(5.1)	(7.7)	(10.4)	(13.1)	(15.9)	(18.7)	(21.6)	(24.6)	(27.6)
Total Shareholders Equity	(2.5)	(5.1)	(7.7)	(10.4)	(13.1)	(15.9)	(18.7)	(21.6)	(24.6)	(27.6)

4.41 The key points arising from the balance sheet analysis are:

1. £27.6 million investment in assets in Year 0 (counting centres, equipment and IT). A further £8 million investment in Year 8 to replace the equipment which has a useful life of seven years.
2. It is expected that there will be deposits not redeemed from the beginning of the scheme which results in a cash inflow. From Year 6 this cash benefit is recognised by way of the net difference between revenue from producers (deposits in) and expenditure paid to retailers (deposits out) and this is used to part fund the scheme. Prior to Year 6 as explained in the income and expenditure section, it is assumed this cash benefit cannot be recognised as a net revenue in income and expenditure as the Scheme Administrator may not have sufficient evidence to justify this. This results in the significant build-up of cash balances in the first five years. The Scheme Administrator may be able to justify the recognition of the net revenue in the income and expenditure account at an earlier date and this would reduce the level of cash balances being built up. However, this will be examined in more detail at FBC Stage 2.
3. A working capital assumption of 30 days has been assumed for both the trade debtors and trade creditors as an initial assumption.
4. The initial asset purchase is assumed to be financed by commercial borrowing which is repaid over a ten-year period.
5. The deposit liability fund is a provision to recognise that potential containers are still out in the public domain which could be returned and, therefore, remain a liability to the Scheme Administrator. This is built up over the first five years as it is assumed during this period the Scheme Administrator has to assume that all deposits will remain repayable. It is only by Year 6 that the Scheme Administrator will have built a sufficient evidence base to justify that there is an element of this liability that can be written off. A prudent assumption that this fund remains stable from Year 6 has been assumed. There may, however, be sufficient evidence for this to be written down which would result in the release of a benefit to the income and expenditure account.

4.7 Cash flow Implications

4.42 Table 35 summarises the impact on the projected cash flow position of the Scheme Administrator as a result of the preferred option.

Table 35: Cash flow implications

£m (Nominal)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Operating Cash Flows										
Cash receipts from operations	5.3	426.0	413.3	410.6	412.6	414.5	385.6	385.1	386.6	389.7
Cash payments from operations	(2.5)	(370.1)	(373.5)	(372.9)	(375.4)	(377.5)	(379.9)	(382.2)	(384.6)	(386.8)
Interest paid	(0.6)	(0.5)	(0.4)	(0.4)	(0.3)	(0.3)	(0.2)	(0.2)	(0.1)	(0.1)
Interest received	-	(0.0)	0.5	0.9	1.3	1.6	2.0	2.0	2.0	2.0
Net Cash Flows from Operating Activities	1 2.3	55.4	39.9	38.1	38.2	38.3	7.4	4.6	3.9	4.8
Investing Cash Flows										
Capital Expenditure	2 (27.6)	-	-	-	-	-	-	-	3 (7.5)	-
Net Cash Flows from Operating Activities	(27.6)	-	-	-	-	-	-	-	(7.5)	-
Financing Cash Flows										
Debt drawdowns	27.6	-	-	-	-	-	-	-	-	-
Debt repayments	(2.5)	(2.6)	(2.6)	(2.7)	(2.7)	(2.8)	(2.8)	(2.9)	(2.9)	(3.0)
Net Cash Flows from Financing Activities	25.0	(2.6)	(2.6)	(2.7)	(2.7)	(2.8)	(2.8)	(2.9)	(2.9)	(3.0)
Cash Balance										
Cash and Cash equivalents at beginning of period	-	(0.3)	52.6	89.8	125.3	160.8	196.3	200.8	202.6	196.0
Net increase/(decrease) in cash held	(0.3)	52.8	37.2	35.5	35.5	35.5	4.6	1.8	(6.6)	1.8
Cash and Cash equivalents at end of period	4 (0.3)	52.6	89.8	125.3	160.8	196.3	200.8	202.6	196.0	197.8

4.43 The key points arising from the cash flow analysis are:

1. During Year 0 to Year 5, the producer fee is set at a higher level to recover the costs of the scheme (including debt service) prior to the recognition of any net benefit from unredeemed deposits as explained in the income and expenditure and balance sheet sections. This will be examined further as part of the next stage of work to identify whether this cash can be released earlier, or whether there are alternative routes to avoid a higher producer fee in the early years without impacting on the liquidity or solvency of the scheme.

2. Initial investment is funded through commercial borrowing – this will also be further examined as part of the next stage to identify the most efficient route for financing the investment requirements. This could include the Scheme Administrator paying an operator fee which would negate the requirement for the majority of the upfront investment, or ramping up investment over the first couple of years as opposed to the full amount in Year 0.
3. The replacement of equipment required in Year 8 is assumed to be funded through the cash balances as opposed to any further borrowing.
4. The Scheme Administrator is indicating a cash balance of around £200 million by Year 6 as a result of the higher producer fee in the earlier years. The next stage will look at alternative routes to make better use of this cash balance, either in the early years or from Year 6 where it could be used to minimise or mitigate the producer fee for a period of time.

4.8 Sensitivities

- 4.44 In addition to the assessment in sections 4.5 to 4.7, sensitivities have been undertaken to assess the impact of varying key assumptions as modelled in the base case assumptions. Given the producer fee is set on a cost-recovery basis (balancing item), the value of this line item will shift to absorb adverse movements that increase the cost base in addition to debt-service on the commercial loan. As a result, the sensitivity analysis measures the impact to the producer fee where variables are altered as opposed to the net scheme position. The producer fee under the base case is, on average, £48.4 million or 3.3p per container under the observatory period which reduces to £25.9 million or 1.5p per container under steady state operations. For the purposes of undertaking the sensitivity analysis, which is concerned largely with the directional change and identifying the variables which have the greatest impact on the producer fee, the average producer fee under steady state has been extrapolated over the ten-year model and has been utilised as the baseline for measurement.
- 4.45 The sensitivities that have been applied, including a brief description and resulting change in the producer fee, are summarised in Table 36 below. All sensitivities have been run in isolation to understand the specific impacts of the considered variable.

Table 36: Sensitivities

Sensitivity	Description	Current assumption	Sensitised assumption	Sensitised average producer fee a year	Change against base case producer fee (%)
Increase in handling fee by 10%	The handling fee reflects the largest driver within the Scheme Administrator's cost base, approximately, 65%. The sensitivity takes the calculated handling fee across all return points and increases this amount by 10%. The handling fee will be subject to negotiation and commercial discussions with retailers.	On average, £48.4 million per year	On average, £53.2 million per year	£25.8 million per year. (1.6p/ct)	Increase by 19%
Increase in volume of DRS material flowing through automatic return point (Return Point 3) by 5%	The volume of DRS material that flows through each return point impacts the logistics cost and handling fee cost elements.	85% Return Point 3 15% Return Points 1,2 and 4	90% Return Point 3 10% Return Points 1,2 and 4	£21.2 million per year (1.4p/ct)	Decrease by 17%

Decrease in sale of material revenue rates by 10%	Each sale of material £/tonne rate is applied to its respective volume of material to calculate forecast revenue. Sale of materials rates can be subject to price volatility in international/ domestic markets for each material type.	PET - £200/tonne Aluminium and steel - £1,300/tonne Glass (flint) - £17/tonne Glass (green) - £6/tonne Glass (brown) - £12/tonne	PET - £180/tonne Aluminium and steel - £1,170/tonne Glass (flint) - £15/tonne Glass (green) - £5.6/tonne Glass (brown) - £11/tonne	£23.3 million per year (1.5p /ct)	Increase by 8.0 %
Increase in logistics fee (manual and automatic) by 10%	Each logistics £/tonne rate is applied to the respective volume of material that is forecast to be collected through the relevant return point channel i.e. 85% of material is expected to be handled through an automatic return point, whilst 15% is expected to be handled through a manual return point.	Logistics fee for automatic handling - £95/tonne Logistics fee for manual handling - £150/tonne	Logistics fee for automatic handling - £105/tonne Logistics fee for manual handling - £165/tonne	£24.7 million per year (1.6p/ct)	Increase by 14.4%

5 MANAGEMENT CASE

Management Case key messages

This Management Case is focussed on the management of the programme of work in place to develop the preferred scheme design and structure of the scheme administrator.

The Full Business Case Stage 2 will detail the governance arrangements for the Scheme Administrator, including regulation, benefits realisation and post programme evaluation.

The key areas explored in the Management Case of the Full Business Case (FBC) Stage 1 are summarised below:

- Programme management arrangements
- Change management
- Benefits Realisation
- Risk management
- Communications
- Project evaluation reviews
- Gateway review arrangements

5.1 Introduction

5.0 This Management Case describes the management arrangements put in place by the Scottish Government and Zero Waste Scotland to build the Strategic and Socio-Economic Cases to develop a DRS for Scotland and to identify a preferred scheme design and delivery model (FBC Stage 1). It also sets out the approach to risk management and external assurance approaches such as the Gateway Review process which have been undertaken to date and which will continue to be applied throughout the life of the programme.

5.1 The DRS is recognised as being a complex multi-organisational programme, beginning with supporting the establishment of a private sector Scheme Administrator. The establishment of the DRS involves:

- Development of governance arrangements.
- Communications and stakeholder management.
- Supporting the establishment of the Scheme Administrator as an organisation.
- Operational arrangements and facilities management at the Scheme Administrator's location.

5.2 The Management Case outlines the current arrangements within Zero Waste Scotland and the Scottish Government while initial design and planning progresses. This case covers:

- Programme management arrangements.
- Change management.
- Benefits realisation.
- Risk management.
- Communications.
- Project evaluation reviews.
- Gateway review arrangements.

5.2 Programme Management Arrangements

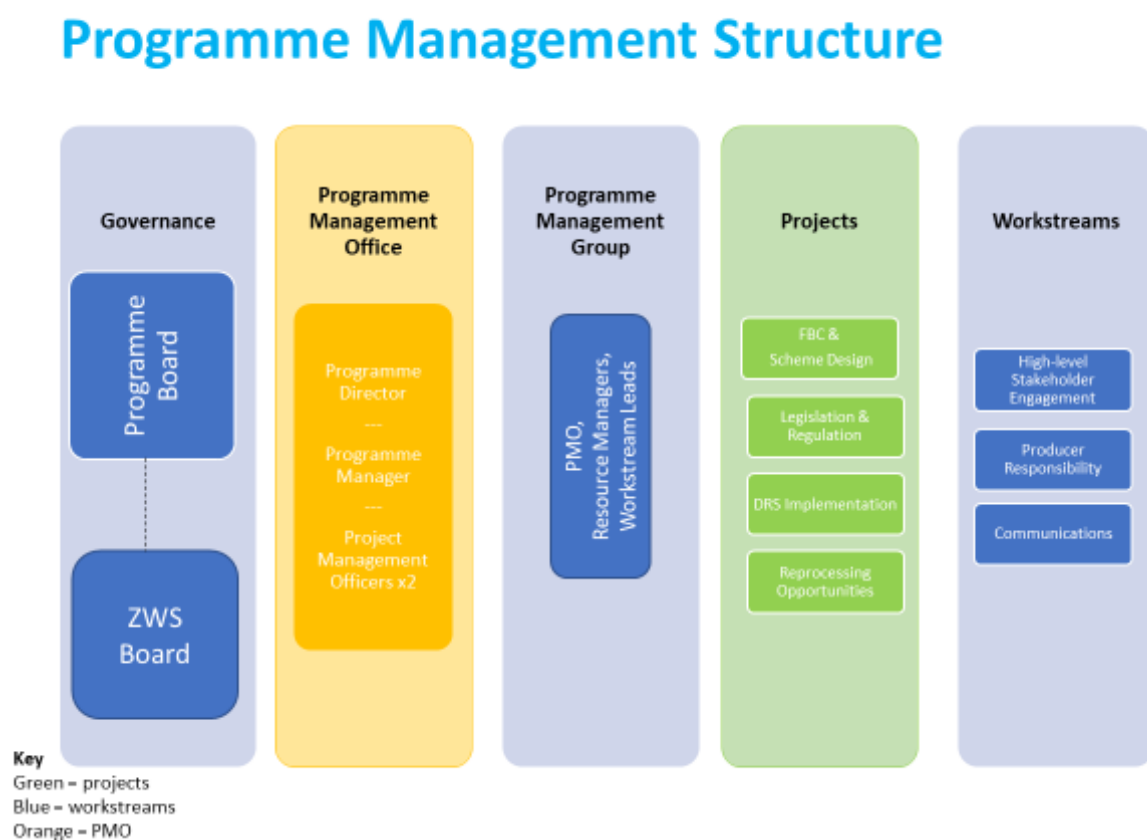
5.3 The project will be managed in accordance with recognised project management methodologies such as Projects IN a Controlled Environment (PRINCE2) and Managing Successful Projects (MSP). The project is under the overall control of an experienced programme director whose sole responsibility is the successful delivery of the project and who is therefore able to give the project the required level of senior management attention. The programme director reports to the senior responsible owner (SRO) of the DRS, the Deputy Director of the Scottish Government's Environmental Quality & Circular Economy Division.

5.2.1 Structure and Governance

5.4 The governance model for the delivery of the FBC Stage 1 is detailed below, which will evolve to support the more detailed business and implementation planning required to deliver the FBC Stage 2.

5.5 The project governance and management arrangements are illustrated in Figure 15 below:

Figure 15: Programme Management Structure



5.2.2 Roles and Responsibilities

5.6 The role and responsibilities of key governance and management groups in the structure are summarised below:

DRS PROGRAMME BOARD

5.7 The DRS programme board is responsible for providing strategic direction and overseeing the successful delivery of the programme.

5.8 The board meets monthly, or as necessary. It is accountable to Scottish Government.

ZERO WASTE SCOTLAND BOARD

5.9 The board's role in the governance of Zero Waste Scotland is to ensure that the organisation strives for excellent performance in accordance with board-approved performance standards, whilst appropriately balancing performance with responsible legal and other conformance obligations.

5.10 The board is responsible for the provision and management of Zero Waste Scotland's resources to the DRS programme. This involves:

- Approval and oversight of the resources allocated to deliver the DRS programme agreed with the DRS Programme Board.
- Holding the Zero Waste Scotland DRS team to account for delivery against the agreed performance management framework and ensure underperformance is addressed quickly.
- Ensuring that the full potential of the DRS programme is realised across Zero Waste Scotland's outcomes.

5.11 The Zero Waste Scotland board meets on a two-monthly basis.

IMPLEMENTATION ADVISORY GROUP

5.12 This group provides guidance and direction on the process of establishing operation and administration of the scheme. It is chaired by the SRO and includes representatives of the drinks manufacturing and retail industries alongside the programme director and start-up director.

5.13 Established in February 2019, the implementation advisory group has no governance responsibilities but will:

- Provide industry expertise and advice on the implementation of the DRS for Scotland.
- Facilitate access to expertise and resources from participants within the group and their broader networks.

5.14 The organisations represented are:

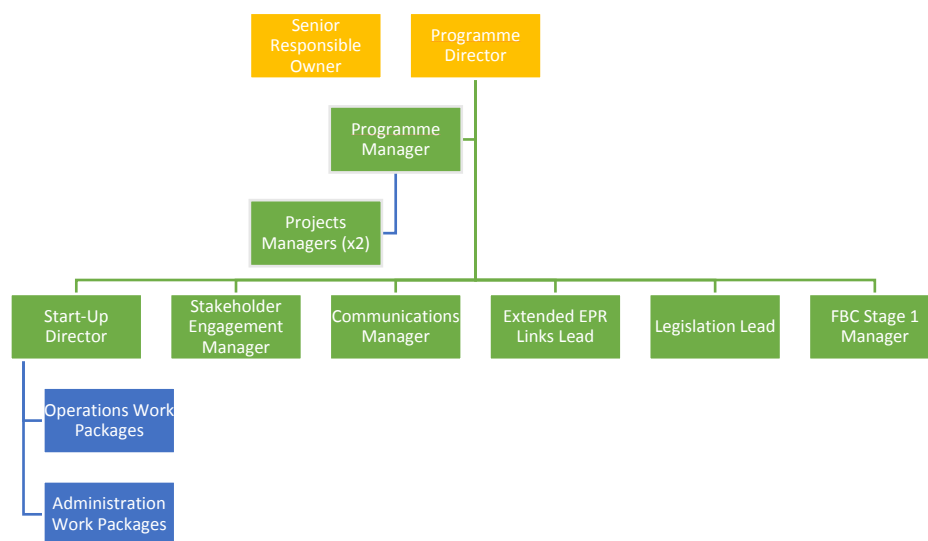
- The British Soft Drinks Association.
- Federation of Small Businesses.
- National Federation of Retail Newsagents (NFRN).
- Natural Hydration Council.
- Scottish Beer and Pub Association.

- Scottish Grocers Federation.
- Scottish Licensed Trade Association.
- Scottish Retail Consortium.
- Scottish Wholesale Association.
- Scotch Whisky Association.
- UKHospitality.

PROGRAMME MANAGEMENT STRUCTURE

5.15 The programme is managed through the programme management structure outlined in Figure 16 below.

Figure 16: Project Management Structure



PROGRAMME DIRECTOR

5.16 The programme director is responsible for the day-to-day management and delivery of the DRS programme and reports to the programme board and the Zero Waste Scotland board.

PROGRAMME MANAGEMENT OFFICE AND GROUP

5.17 The programme director is supported in this role by the programme management office. The project management office provides the project management processes and controls required to support the delivery of the project and monitors and reports on progress.

5.18 The programme management group consists of the programme management office as well as project and workstream leads and representatives of organisations providing resources to the project including the Scottish

Government and SEPA. The programme management group meets fortnightly or as necessary.

PROJECTS AND WORKSTREAMS

5.19 The programme comprises several projects and workstreams which are detailed below.

5.20 Led by the start-up director, the implementation work is informed by the implementation advisory group and comprises eight work packages organised under operations and administration. These are:

- **Operations – comprising:**
 - Logistics and locations.
 - Interaction with existing production and distribution arrangements.
 - Fraud prevention.
 - Data and ICT.
- **Administration – comprising:**
 - Scheme Administrator.
 - Financing.
 - Procurement.
 - Socio-economic benefits.

5.21 These are supported by several workstreams including **communications** and **high-level stakeholder engagement** which will continue throughout the lifetime of the programme and are detailed in Section 5.6 below.

5.22 A separate workstream focused on **links with extended producer responsibility** ensures that policies being developed in Scotland which may impact on the DRS are complementary. It also maintains contact with developments being considered in England and Wales by liaising with Department for Environment, Food & Rural Affairs (DEFRA) officials.

5.23 Two additional short life projects are:

- Legislation – informing the legislation which will establish the Scheme.
- FBC Stage 1 – securing Ministerial approval for the FBC Stage 1.

5.3 Change Management

5.24 Change management associated with the programme will be managed through the programme board. Day-to-day change management of service issues will be discussed at the programme management group and any resultant programme changes will need to be approved by the programme board and Zero Waste Scotland board.

5.4 Benefits Realisation

Proposed Benefits Realisation Plan

5.25 The delivery of benefits will be managed through the programme board, using a proposed benefits realisation plan (BRP). This indicates who may be responsible for the delivery of specific benefits, when they may be delivered and how achievement of them may be measured.

5.26 The BRP provides the means by which the board will ensure that the potential benefits arising from Scotland's DRS may be realised and will demonstrate that the investment has been worthwhile to key stakeholders.

5.27 The BRP will be further developed in the FBC Stage 2.

5.5 Risk Management

5.28 Risk management serves as a mechanism for risk reduction. By taking a proactive approach to managing risk exposure, the board ensures protection of operational and reputational risks. This programme will be managed in that context.

Risk Management Policy

5.29 The programme risk register describes and evaluates significant risks that may affect achievement of the programme objectives and outcomes. The risk register is managed by the PMO and is used as a tool for managing risks that would potentially impact on programme delivery. It is reviewed regularly by the programme management group and the programme board.

5.30 The risk register nominates an 'owner' for each risk who is responsible for the management of the risk and the required mitigations.

5.31 The key risks to the delivery of the project are shown in the Strategic Case at section 1.4 above.

5.6 Communications

5.32 There is a range of stakeholder groups, including consumers, who have an interest in the introduction of a DRS and how this is delivered.

In recognition of this profile, a communications strategy and a high-level stakeholder engagement plan have been developed for the programme. This section of the FBC provides a summary of this strategy and plan.

Communications Strategy

5.33 Communication is a dedicated workstream for the programme, supporting all other projects and workstreams. There is a standing item on the agenda for meetings of the PMG, programme board and Zero Waste Scotland board and this provides the opportunity for detailed discussion on communication issues with a range of key partners.

5.34 The communication strategy forms part of the work of the programme board in helping to inform, educate and influence a wide range of stakeholders and the public to enable an understanding of how the scheme design delivers on the agreed principles.

Stakeholder Engagement Plan

5.35 Stakeholder engagement is a dedicated workstream for the programme and ensures that key stakeholders are kept up-to-date with the progress of the project. The objectives are to ensure stakeholders are aware of developments within the programme, can maximise the benefits and minimise the impacts of a DRS. The plan will maintain regular communication with key stakeholders through the following approaches:

- The implementation advisory group engages industry representatives to provide expertise and advice on the implementation of a DRS for Scotland.
- Attendance at key stakeholder meetings including conferences to maximise the reach of stakeholder engagement.
- Regular meetings and/or calls with stakeholders (both representative associations and individual organisations) to ensure they can input into the scheme, receive updates on progress and update the programme on their progress on DRS.
- Stakeholder engagement activity is undertaken by the Scottish Government and Zero Waste Scotland.
- Updates on engagement are provided to the PMG and programme board.

5.7 Project Evaluation Reviews

5.36 The DRS is a significant programme for Scotland and will run over a lengthy period. Within the programme itself there are distinct phases. In view of the complexity and length of the programme, reviews will be conducted at the conclusion of key stages. This is to ensure that there is a systematic analysis of the processes and procedures employed at each stage, an identification of lessons learned and the incorporation of these learning points into subsequent phases of project delivery.

5.37 These key stages are:

- Completion of the FBC Stage 1.
- Completion of the FBC Stage 2.
- Establishment of the Scheme Administrator.

5.38 Reviews will be conducted by the programme director with input from the programme board, other project team members, specialist advisors and operational staff. The outputs of these will be reported to the programme board.

5.39 Over time, the management arrangements for the DRS will transfer to the Scheme Administrator. Responsibility for the execution of any remaining reviews will therefore pass to the appropriate governance structure.

5.40 In addition to the planned Project Evaluation Reviews it is anticipated that the Scheme Administrator's internal auditors will, as part of their yearly programme of audit work, review project management arrangements from time to time.

Post Implementation Review

5.41 These reviews ascertain whether the anticipated benefits have been delivered.

5.42 The Post Implementation Review (PIR) takes place after all of the planned changes have been put in place and allowed to bed down, although there is a case to be made for conducting at least a two-stage PIR, in order to allow both an early and then a more mature evaluation of the delivery of project benefits. The PIR takes as its starting point the benefits realisation plan and describes to what extent the benefits identified are being achieved.

5.43 An initial PIR will be conducted 6 to 12 months following establishment of the Scheme Administrator, and again 12 to 24 months later. Since the Zero Waste Scotland project team will have been disbanded at this point and it is unlikely that there will be sufficient resource available within Zero Waste Scotland to

conduct this work, external support will be commissioned to undertake this work at an appropriate point.

5.8 Gateway Review Arrangements

5.44 The Scottish Government will utilise the Gateway Review process throughout the lifetime of the programme.

6 Annex

6.1 Accounting Treatment and Budgetary Analysis – Detail

6.1.1 Accounting Classification

6.0 In the UK, the classification of entities is determined by the ONS which itself is informed primarily by the European System of Accounts (ESA) guidance produced by Eurostat. In cases where the classification is unclear, the ultimate decision is taken by Eurostat. All EU countries are required to follow this guidance. The classification of institutional units – i.e. those entities with the economic competence to own goods and assets, incur liabilities, enter into contracts in their own right, and produce a complete set of accounts – involves establishing:

- Whether the unit is a market or non-market producer.
- Whether the unit is subject to public sector control, or not.

6.1 Determination of whether a unit is a market or non-market producer is based on whether the corresponding goods and services are traded under the following conditions:

1. Sellers act to maximise their profits in the long term, and do so by selling goods and services freely on the market to whoever is prepared to pay the asking price.
2. Buyers act to maximise their utility given their limited resources, by buying according to which products best meet their needs at the offered price.
3. Effective markets exist where sellers and buyers have access to, and information on, the market. An effective market can operate even if these conditions are not met perfectly.

6.2 Based on the above characteristics, it is expected that the Scheme Administrator would likely be deemed a non-market producer on the basis that it will not be selling goods or services with a profit motive, and its customers will have limited choice over their participation and interactions with the entity.

6.3 In ESA 2010, control over an entity is defined as “the ability to determine the general policy or programme of that entity”. There are three criteria of control that are individually sufficient to determine government control. If they are inconclusive, there are a further six criteria that have to be considered, as “a number of separate indicators may collectively indicate control”. In addition, ESA 2010 provides for an additional control criteria that needs to be considered

when an institutional unit is a non-profit institution (NPI). This control criteria has been included in Table 37.

Table 37: ESA 2010 Control Indicators

Individual Criteria	Separate collective criteria	Non-Profit Institution (NPI) criteria
1. Rights to appoint, remove, approve or veto a majority of officers, board of directors, etc. 2. Rights to appoint, veto or remove a majority of appointments for key committees (or sub-committees) of the entity having a decisive role on key factors of its general policy 3. Ownership of the majority of the voting interest	4. Rights to appoint, veto or remove key personnel – determining general policy through influential members of the board 5. Rights under special shares and options – “reserve rights” that exert a decisive control on the strategy of the institutional unit and other key decisions 6. Rights to control via contractual agreements 7. Rights to control from agreements/permission to borrow 8. Control via excessive regulation 9. Others - provisions in the statute of an entity where public sector approval would be required for some important decisions such as allocation of its results, the development or the abandonment of activities, merging and acquisition operations, dissolving and changing statute.	(a) The appointment of officers (b) Other provisions of the enabling instrument - An NPI would be considered to be controlled by government if approval of government would be required to change the statute of the entity (or the type of activity carried out by the entity), or if the entity could not dissolve itself or terminate any relation with government without such approval (c) Contractual agreements (d) Degree of financing - An NPI that is mainly (>50%) financed by government may be controlled by government. Control assessed if such financing would be permanent (and not on temporary basis) and/or if it would result in a narrow monitoring of the use of the funds and a strong influence from government on the general policy of the entity. (e) Risk exposure - Government “exposed to all, or a large proportion of, the financial risks associated with an NPI's activities.”

Source European System of Accounts ('ESA) Section 10

- 6.4 In order to determine the potential classification of an entity, an assessment against the above indicators is needed to determine the extent to which the public sector is deemed to control its general policy.
- 6.5 If a non-market producer is classified to the public sector it is considered part of general government. If not, then it is classified as a “non-profit institution”.

Likely Budgetary classification of feasible Delivery Models

- 6.6 Based on the outlined structures Options 1A and 1B are likely to be classified to the public sector on the basis that another public sector classified entity (Scottish Government) will hold all of the voting rights. Option 2 is likely to be classified to the private sector based on the information presented, however further analysis of the details around issues including director nominations, contracts and funding would be required in order to fully determine how it would likely be classified by the ONS.
- 6.7 It is also necessary to understand the impact and extent to which a regulator would exert control over the Scheme Administrator under Option 2.
- 6.8 For Option 3, it is initially expected that the Scheme Administrator would be classified to the private sector. However, the existence of public sector equity, presence on boards, and voting rights starts to suggest the public sector is looking to influence the Scheme Administrator in some way. It is generally accepted that any holding below 20-25% would not necessarily cause a reclassification to the public sector, however the existence of special shares and voting rights, veto powers, or the ability to nominate directors would indicate control in spite of the minority equity stake.

Regulation and potential impact on Scheme Budgetary Classification

- 6.9 There are aspects of the design of the Scheme Administrator that could still lead to a public sector classification even under Options 2 and 3. Considerations around whether the Scottish Government mandates operational aspects such as recruitment and remuneration policy, marketing activities, and investment and procurement decisions, may not individually suggest public sector control. The assessment, however is a holistic one. While the threshold quantum is not defined, the existence of multiple indicators such as those listed could cause the ONS to classify the entity to the public sector, which would therefore result in budgetary implications for the Scottish Government.
- 6.10 The treatment of regulators is slightly different to other bodies. It is acknowledged by Eurostat, the ONS and HM Treasury that regulators play a

unique role in a market and do affect control over other entities in discharging their responsibilities. This does not necessarily mean that all regulated bodies fall under the same classification as the regulator. For as long as regulation is over external actions - such as price regulation, and regulation of markets - it is unlikely to amount to overall control.

- 6.11 If regulation over an entity is so tight that it effectively dictates the general policy of an organisation, however, then this could amount to control. While uncommon, it is also possible for controls of regulators to make all subject bodies public. This is mainly an issue where regulation extends to internal management – e.g. setting pay levels, borrowing restrictions, or approval of appointments – and as a result, it could be seen as taking control. Therefore any considerations regarding the role of a regulator at FBC Stage 2 will need to take this into account.

Accounting Treatment of Scheme Administrator

- 6.12 Under a private sector delivery model and assuming a private sector classification, the Scheme Administrator will be bound by normal company law provisions to prepare financial statements in accordance with UK accounting standards and applicable law (Generally Accepted Accounting Principles (GAAP)).
- 6.13 If the Scheme Administrator was deemed to be classified to the public sector and fell under the departmental boundary of the Scottish Government, then it may be appropriate to consider applying International Financial Reporting Standards (IFRS) instead, in order to ease consolidation.
- 6.14 If it were later determined that the Scheme Administrator was to be converted to a charity, it would then need to apply the Charities SORP and FRS102.
- 6.15 Further discussion of how the individual elements of the scheme are treated is set out in the Financial Case.

Budgetary implication of feasible Delivery Models

- 6.16 If either of the two public sector Options 1A or 1B was to be pursued, the scheme could have both capital and revenue implications for the Scottish Government, summarised at a high level in Table 38 below. It should be noted that this is not a formal classification view, as the ONS is the arbiter for sector classification in the UK. The view represents an interpretation of the guidance at a point in time, based on the available information; however, the ONS may reach an alternative conclusion. Furthermore, subsequent iterations of the

scheme design, and further detailing of the contracts and agreements within, are likely to have material impacts on the classification and budgeting implications.

6.17 Options 2 and 3 have not been included as it is expected they would be private sector classified so there would be no budgetary implications.

Table 38: Budgetary Implications Indications

	1A			1B		
	CDEL	RDEL	Non-budgetary	CDEL	RDEL	Non-budgetary
Deposits inflow/outflow		+’ve and –’ve				+’ve and –’ve
Unredeemed deposits		+’ve			+’ve	
Interest on deposits		+’ve			+’ve	
Producer fees			✓			✓
Materials Fees		+’ve			+’ve	
RVM acquisition	-’ve				*	
RVM maintenance		-’ve			*	
Counting centre/ bulking centre acquisition	-’ve			-’ve		
CC/BC maintenance		-’ve			-’ve	
Logistics costs		-’ve			-’ve	
Scheme Administrator operating costs		-’ve			-’ve	
Handling fees		-’ve			-’ve	

*RVMs assumed to be acquired and maintained by Retailers. The Scheme Administrator would pay for this through the Handling Fee to retailers which would be a –’ve RDEL implication.

Source Deloitte LLP

6.18 Option 2 and 3 would have no budgetary implications based on the assessed private sector classification. Option 1A would result in both CDEL and RDEL implications, with the requirement for around £100m CDEL in the initial year, with ongoing RDEL implications. Option 1B would result in a reduced CDEL implication (around £30m) but this will be achieved by an increase in the RDEL implications.

6.19 Based on a high-level assessment of the various funding flows against the HM Treasury consolidated budgeting guidance, Table 39 outlines the potential budgetary implications under Options 1A and 1B.

Table 39: High level budgetary implications under Options 1A and 1B

Funding Flow	Potential budgetary implication	Key considerations
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<p>Deposits</p>	<p>N/A – the budgeting for deposits follows the accounting. Based on a proposed structure whereby the Scheme Administrator is deemed to be acting as a principal to two separate and distinct business relationships i.e. with the producers in billing for the number of materials sold into the system, and with the retailers to reimburse them for deposits paid out to the system, the budgeting treatment of any differences would likely impact RDEL. That is, if the Scheme Administrator is recognising the income from producers as an RDEL benefit, and the amounts paid out to retailers as an RDEL charge, any variance would score as a net RDEL benefit / charge in a given year.</p> <p>The ability for the Scheme Administrator to recognise the amounts billed to producers as revenue is dependent on this being considered a revenue generating activity in accordance with the applicable accounting framework and standards that the Scheme Administrator would look to apply. There is precedent in other parts of Europe for accounting in this manner. However further analysis should be carried out at FBC Stage 2 to confirm the details of how this would apply in the UK.</p> <p>It should also be noted that prudent accounting principles would require the Scheme Administrator to recognise its obligations to repay the system for any deposits that remain in circulation at any given time. To do this, the Scheme Administrator would likely need to provide for a certain level of the outstanding deposits in the system, effectively assuming they will be paid at some point in the next 12 months. The level at which this provision is set (i.e. at one end of the spectrum 100% of outstanding deposits or alternatively none of the outstanding deposits) would reflect a management estimate and judgement of the Scheme</p>	<p>Further work may be required into whether the deposit is deemed to be a tax on the public if it is paid to a public sector scheme administrator. Exploration of this, and consultation with HM Treasury and ONS, will be carried out in FBC Stage 2 as necessary.</p>
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	Administrator, and should be based on appropriate evidence and justification in order to be a true and fair representation of the likely obligations of the entity.	
Unredeemed deposits	RDEL benefit – it is expected that the system will include terms and conditions around the length of time after which the Scheme Administrator is able to retain unredeemed deposits. The Scheme Administrator will need to provide justification and evidence to support their assumption, so the unredeemed deposits can be recognised as a benefit to the Scheme Administrator and would likely result in an RDEL benefit although this would be in turn be off-set by a reduced producer fee.	A more detailed understanding of the deposit redemption and retention process is required to fully assess against the applicable accounting and budgeting guidance.
Materials fees	RDEL benefit – income from materials is generated through sales to open market. These types of transactions, assuming they are genuine open market sales, and the buyer receives something in return, generally score as an RDEL benefit	None
Producer fees	TBC – this will depend on the economic substance of the receipts and whether the nature of how the transaction is administered.	
Handling fees	RDEL or CDEL cost – this will depend on the economic substance of the transaction and what, if anything, the Scheme Administrator receives in return for the payment	<p>The budgeting implications of the handling fee will be dependent on the economic substance, specifically how the fees are set, and whether the Scheme Administrator receives anything in return for the payment</p> <p>The fee could be considered a non-exchange transaction whereby the Scheme Administrator receives nothing (of tangible economic substance) in return for the amount paid. In which case, this could be considered a grant or subsidy (depending on the profit motive of the receiving body)</p> <p>If considered a grant or subsidy, the amount is generally scored to RDEL. In instances where the</p>

		<p>Scheme Administrator requires the recipient to use to money to fund capital, then this could be considered a capital grant, which would score to CDEL. Therefore, determination of how the handling fee is administered and controlled is important in understanding the budgetary implications.</p> <p>If the fee forms part of a contract with the providers in a commercial transaction, then this expenditure would most likely score to RDEL in the same manner as other government service contract expenditure. A more detailed review of the terms and conditions of any such contract, and the potential for any capital implications, would be required in order to fully understand the budgetary impact</p>
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Source Deloitte LLP

- 6.20 Specific budgetary constraints have not been identified but the ability to mitigate CDEL and RDEL implications through a private sector model further supports the selection of Option 2 or Option 3.

Conclusion on Scheme Accounting and Budgetary Implications

- 6.21 Based on the preferred scheme design of a private sector model, it is expected that the scheme is likely to be classified as private sector under relevant accounting regulations, meaning there will be no additional budgetary implications for the Scottish Government as a result of the scheme.
- 6.22 The public sector may incur additional regulatory costs, but it is expected these would be charged back to the private sector as a compliance fee in line with other regulated activities such as utility companies. This would result in a net nil impact to budgets.
- 6.23 The final classification of the Scheme Administrator would be undertaken by ONS and can only be completed once the full commercial details have been finalised, as a number of elements will need to be considered to achieve a final view.
- 6.24 If a different delivery model is chosen that results in a public sector classification, the Scottish Government will need to ensure that it has allocated

sufficient budgetary cover for the operation of the DRS both from a capital (CDEL) and revenue (RDEL) perspective.

6.1.2 Precedents from other DRS Schemes – Detail

6.25 A 2016 report published by Reloop provides an overview of 38 different deposit return schemes currently in operation around the world⁵⁴. In Europe 133.1 million inhabitants have access to DRS, while in North America 121.9 million inhabitants have access. Several examples of deposit return schemes in countries that have comparable features to the preferred scheme design are presented below.

Europe

6.26 Across Europe, with the exception of Iceland, the various schemes currently in operation follow a return to a place of purchase model where the consumer returns their empty drinks container to a retail location.

6.27 With the exception of Norway and Sweden, all collect glass and metal cans and plastic bottles (with most predominantly collecting PET). The Netherlands only collects plastic bottles. All have a centralised clearing scheme, with the exception of Germany where a decentralised model is in place. The clearing scheme can be defined as “the entity responsible for reconciling the deposits paid/redeemed”. The capture rate for these schemes varies country by country and is between 80-95%.

North America, Iceland and Australia

6.28 Across those states in North America and Australia where a DRS is in operation a ‘depot model’ (dedicated drop-off points) is the most prevalent method of return. This model can also be seen in Iceland. Under a depot model, consumers return their empty drinks containers to dedicated drop-off points, with such locations tending to be established where sufficient quantities of materials arise. Such DRS models tend to have a return rate of between 50-60% (with the exception of rural locations with small populations).

California, Maine and British Columbia

6.29 While the majority of North America follows a depot model there are some examples of a ‘hybrid’ DRS. Under such schemes, retailers are required to ensure that a dedicated drop-off point is located within a set proximity to their

⁵⁴ [Reloop Releases Global Overview of Deposit Return Systems](#)

premise or accept containers for return directly. The return rate for containers within these schemes can be up to 80%.

6.2 Regulatory Considerations – Detail

Table 40: Regulatory Considerations

Issue	Principle
Deposit	<p>Determine the deposit level, so that the right behavioural changes are encouraged</p> <p>Ensure all entities that sell any beverages with in-scope materials for packaging should collect these deposits</p> <p>Ensure all entities that sell these beverages (or any relevant intermediaries) should accept the packaging and pay the relevant deposit</p> <p>All these beverages should be traceable, so that the deposit levels are linked to each packaging</p>
Handling fees	<p>Determine the conditions and mechanism for paying the handling fees</p> <p>Ensure handling fees are only paid for traceable in-scope packaging (to help prevent fraud)</p>
Materials in scope	<p>Determine the materials that are to be included in the scheme, and how future materials will be assessed/incorporated</p> <p>Determine the target re-use and recycling rates</p>
Tracing/marketing	<p>Determine how packaging is to be marked for inclusion into the scheme</p> <p>Determine that all packaging for which deposits are collected or paid should be registered and marked, although this needs to be considered in greater detail as it may not be possible due to reserved limitation</p>
Registration	<p>Ensure all stores and relevant intermediaries selling in-scope beverage packaging are registered with the Scheme Administrator so that the administrator may ensure deposits are collected and handling fees are paid. Products that have not been registered cannot be incorporated into the scheme.</p> <p>Determine who, how and when stores should register with the Scheme Administrator (including any registration fees)</p> <p>Determine how stores should register the beverage packaging they sell</p>

	Determine how importers should register new packaging (including whether the packaging is re-usable or recyclable)
Collateral	<p>All producers should provide collateral to the scheme for deposit collection and producer fees while the Scheme Administrator decides whether the new packaging is to be incorporated into the DRS</p> <p>Any producers that pose a financial risk to the Scheme Administrator through the significance of their deposits or producer fees should provide sufficient collateral to mitigate this risk</p> <p>What the size, and terms, are for the collateral that producers provide to the Scheme Administrator</p> <p>Determine the form and mechanism for the provision of collateral</p>
Other	A robust and comprehensive regulatory regime can also help to facilitate the wider 'additional benefits' as discussed within the Commercial Case

Source: Deloitte Analysis



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