

Deposit Return in the Netherlands

An assessment of the
Afvalfonds proposal for
beverage can collection
in the public domain



Report For

Recycling Netwerk Benelux

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Executive Summary

Background

The Netherlands is mandated to introduce a deposit return scheme (DRS) for cans by 31st December 2022. The DRS is expected to achieve a 90% separate capture rate by 2024, enabling improved recycling performance and significant litter reductions. The Netherlands already has DRS provision for single use plastic bottles and reusable beer bottles.

Afvalfonds Verpakkingen (from now on: “Afvalfonds”) published a short report outlining their plans for DRS provision for cans in December 2021.

Achieving a 90% return rate means matching the performance of the best schemes in the world. Delivering a high-performing DRS is not simply a legal and technical challenge. High-performing DRS’s have to put people at the centre of both design and delivery, because it is public participation, or the lack of it, that will make a DRS a success or a failure.

Recycling Netwerk Benelux commissioned Eunomia to conduct this study to consider firstly how likely this plan for DRS provision for cans in the Netherlands is to deliver the 90% capture rate once fully functional, and secondly, how likely the system is to be up and running effectively by the start of 2023.

Eunomia Research and Consulting have extensive experience working on DRS in countries around the world, with governments, manufacturers, retailers, DRS operators, and NGOs. For this report we also conducted targeted interviews with experts and practitioners in the Netherlands, including both “industry” perspectives (a category which groups individuals with expertise and understanding of DRS provision and the beverage market) and “municipal” perspectives (a category which groups individuals with expertise and understanding of waste management, planning, and municipal service provision). Our interviewees overwhelmingly chose to remain anonymous. These requests are respected throughout the report and limit our ability to give specific information and sources relating to the Dutch context in some cases. We have used these experts’ input to both test the transferability of international experience to the Netherlands, and to highlight unique challenges or opportunities in the Dutch context.

Features of high-performing schemes internationally

A 90% return rate is dependent on very high consumer participation. The scheme can afford to “lose” very few containers, so maximising the extent to which the scheme encourages and enables people to take part throughout design and delivery is essential. **There is no single factor that determines scheme performance on its own in terms of participation. It is how**

different factors combine into a compelling overall user experience that will determine whether the 90% target can be achieved.

We identified four factors that combine to create the user-experience needed in a high performing scheme:

- **The value of the deposit**, which determines the economic incentive to participate.
- **Highly convenient return and redemption opportunities**, including both the absolute number of return points, and the geographical location of return points in relationship to other everyday behaviours, as critical factors in determining user convenience.
- **A consistent and straightforward system design** which will facilitate public understanding and motivation to use the DRS.
- **Clear communications** (including campaigns, labelling, and visible infrastructure) to support the factors mentioned above.

Internationally, higher deposit levels are associated with higher performance, but do not determine performance on its own.

This study assesses convenience of return and redemption against measures of both the number of return opportunities provided, and against overall system design principles. Return-to-retail models (where containers are returned to the same locations where they can be purchased) do well against both measures of convenience and correlate with higher performance internationally. No DRS without return-to-retail achieves a 90% return rate.

Internationally, schemes offer consistent treatment of different containers by default, with provision of return opportunities for single use cans and single use plastic bottles identical and universal in all schemes where both are in scope. When schemes have expanded in scope internationally, provision for return has remained the same for consumers.

Communication efforts are hard to standardise for international comparison but are greatly facilitated when the scheme design itself is convenient and simple. “Where”, “how”, and “why” all need to be clearly communicated and understood by consumers for a scheme to perform effectively. The interaction of marketing campaigns, labelling, and scheme provision all play a part in communications.

We also carried out a behavioural analysis of factors that drive individual participation. **We applied a “COM-B” analysis to highlight how a DRS can influence people’s capacity, opportunities, and motivation, to effectively change behaviour. In a good intervention, these drivers will tend to mutually reinforce each other.** The opposite can also be true – barriers to participation, or poor experiences can undermine perceptions and motivation. This analysis also highlighted the importance of reinforcing existing habits, and the limitations of relying on the economic incentive of the deposit alone as a motivator for behaviour. **This behavioural analysis strongly aligned with our analysis of performance factors associated with high-performing schemes.**

Performance risks in the Netherlands

The Afvalfonds proposal aims to provide 3,300 return locations once fully operational. These are described as “near” store in nature, with the intention that there will be an RVM for cans within 500m of every supermarket once fully operational. On launch, the design promises around 1,300 of these new locations will be provided, with temporary provision “at” supermarkets in 1,500 other locations on launch day, with a transition to the final arrangement (of entirely “near” store provision) over 2023 and 2024.

Our analysis identified a number of risks with the details of this proposal when compared to the highest performing schemes internationally, and we additionally explored these issues in interviews with experts in the Netherlands.

The key performance risks that came from international comparison were:

- **Divergent DRS provision for different containers**
 - Every system internationally provides identical return locations for single use cans and plastic bottles, whilst the Dutch scheme will require consumers to visit two locations if they wish to return different containers.
 - Dutch citizens will face DRS provision for cans that differs from what they are used to (i.e. return-to-retail for plastic bottles and reusable beer bottles), challenging habits, and representing a shift to a less convenient return model.
 - Divergence and change will both be features of the period in 2023 and 2024 where return points move from temporary locations (i.e. “at” store and potentially more aligned with the DRS for other containers) to permanent ones that may be less convenient.
 - Integration of can and plastic bottle return at new “near” store locations would leave reusable beer bottles being returned in store, and still represent split provision. It would also mean removing plastic bottle return from more convenient store locations which is unlikely to motivate consumers. The Afvalfonds proposal suggests plastic bottles will be integrated with the new can return points over time, but industry interviewees expected plastic bottle return to remain an option in store for the medium term, so we expect split provision to be a result of the proposal for cans DRS for the foreseeable future.
 - Expert interviewees also identified that:
 - Split provision would be more operationally challenging. This may not directly affect performance but could do so if it is not possible to meet the levels of service and reliability consumers expect from existing in-store DRS return points in unstaffed and outdoor locations.
 - Integration with existing plastic bottle DRS is potentially feasible. Not doing so might therefore shape consumer perceptions of the scheme, and the extent to which it is designed to maximise their participation, which could have indirect impacts on performance by demotivating participants.
- **Return point provision that falls below the levels seen in schemes achieving 90% return elsewhere**
 - The Netherlands is proposing a very low number of automated Reverse Vending Machines (RVMs) per person (2.5 RVMs per 10,000 people) and return and redemption points (1.9 return locations per 10,000 people). Both are far lower than other schemes that achieve 90% return. In contrast, Germany, the highest performing DRS in the world at 98% return rates, has 5.3 RVMs, and 16 redemption points overall, per 10,000 people.

- **The return model chosen is not return-to-retail, which is the model seen in schemes achieving 90% return rates elsewhere**
 - Return-to-retail matches return points to the places people already go to purchase the same products. In the Netherlands it also matches existing return locations for other containers
 - Dutch consumers are already familiar with this approach, and it would match with existing return behaviour if adopted. It is also the stated preferred model in consumer surveys in the Netherlands (89% expressed this preference in a survey by Consumentenbond)
 - Return points within 500m of a supermarket do not compare with true return-to-retail models internationally or in existing provision in the Netherlands. Expert interviewees additionally highlighted ideal locations might not be available in practice, and that provision might be less convenient than forecast in the proposal, increasing inconvenience
 - Provision of RVMs at unstaffed and outdoor locations is likely to see less reliable service provision due to both human behaviour (accidental or deliberate misuse) and the weather, while repairs will be more challenging and so slower to deliver as each will require a dedicated visit (whereas in store the vast majority of issues are addressed in real time by store staff). More machine downtime will mean a poorer user experience, which will be demotivating for future participation.

In combination we believe these pose a serious cumulative challenge to achieving three of the four success factors we identified as central to creating a user experience that maximises consumer participation. The final factor, the deposit level proposed, is neither very high nor very low. Some schemes achieve 90% return rates with deposits at this level, but not all of them. At this deposit level it is our assessment that the rest of the user experience will be even more critical to success in reaching 90% return rates.

The risks we identify around inconsistent DRS provision in the Netherlands, and the fact provision will also be more limited and less conveniently located than international DRS's are cumulative. **Some of these risks might be expected to threaten the achievability of the 90% target as single issues, but in combination we think they are likely to have a cumulative effect that results in too many containers being "lost" to the scheme to reach 90%.**

Expert interviewees also highlighted additional risk areas that are more unique to the Dutch context.

One of these was that while the Afvalfonds proposal suggests that "near" store provision may facilitate anti-litter impacts from a DRS, this is not our assessment based on behavioural analysis. **Expert interviewees additionally raised concerns that unstaffed and outdoor RVMs could produce additional litter,** from bags used to transport containers, or ineligible containers, left behind at such locations. While not directly harming performance of the scheme in terms of return rates for containers accepted at that location, this could harm perceptions from the public, and damage participation indirectly.

A second concern raised was the importance of consulting with municipalities around selecting and siting return locations in, or impacting on, public space. The proposal for cans assumes planning permission for return points can be fast-tracked, but municipal interviewees were clear that consultation with residents is essential, and that the municipal perspective on operational constraints is also needed. Municipalities must be consulted regarding impacts on litter and waste management requirements, and also issues of power supply, vehicle access at

busy times, and general fit of additional infrastructure to a busy urban environment. These challenges will vary per location. Thus in assessing the national viability of the scheme, it is the challenging locations, rather than the easy ones, that need to be tested for compatibility. As with unintended litter consequences, getting this wrong would negatively impact wider perceptions of the scheme, and could indirectly impact performance.

The launch deadline

Based on the available evidence we cannot definitively conclude whether the launch deadline is achievable or not, but **the deadline is clearly very challenging given the operational model proposed.**

The Afvalfonds proposal has features that pose some unique challenges in building an operational system, compared to scheme launches we are familiar with internationally.

Installing RVMs on new sites, that will not be owned or supervised by existing retail operations poses installation, logistics, and maintenance challenges that will be harder than return-to-retail rollouts internationally. Municipalities, who are key stakeholders in the rollout, do not know what will be asked of them, or for when, and expressed concerns about achievability.

Additionally, our assessment is that operationalising the proposal for cans is likely to be more complex than launching the small plastic bottle DRS in the Netherlands in 2021. The latter took advantage of existing locations, infrastructure, and logistics for large plastic bottles, already provided by retailers, and this both reduced the amount of new work needed, and delegated elements of operational responsibility to retailers.

Expert interviewees also raised concern about the planning requirements for the new return locations. Municipal interviewees believe that both legally and practically these return locations should go through a planning process at local level. The way this will be done, the exact timeline, and the extent of support from municipalities are not yet specified and caused real concerns for our interviewees.

Concerns expressed in expert interviews have focused on procurement and installation of RVMs. Based on international launches, 12 months might be required for the Dutch proposal, but the complexities highlighted above may make the Dutch launch more challenging. **Additionally, we identify several further critical pathways to launch based on international experience that we anticipate need to be underway already or to start very soon.** These include: procurement and transport and logistics (potentially a 9-month requirement); provision of central infrastructure such as counting centres (potentially a 12-month requirement); provision of IT systems (potentially a 6 month requirement), and development and delivery of consumer communications (potentially starting 5 months before launch).

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1.0 Introduction

Background and Context

The Netherlands is due to introduce a deposit return scheme (DRS) for canned drinks containers on 31st December 2022. The DRS is tasked with achieving a 90% separate collection rate by 2024. Both the launch date and target are legal requirements¹. The decision to implement a DRS for cans was formally communicated by the Dutch government in February 2021², and built on the earlier announcement of DRS provision for small plastic bottles in April 2020³ (which launched in July 2021). In addition to increased recycling, a key objective of DRS in both cases is to reduce littering⁴. Dutch citizens were already familiar with DRS as a concept, having had provision in place for both large plastic bottles, and for reusable beer bottles, for many years.

Afvalfonds Verpakkingen (from now on: “Afvalfonds”) published a short report outlining their plans for DRS provision for cans in December 2021⁵. Key features of the proposal relevant for this assessment are summarised below.

- When fully operational there will be 3,300 locations where individuals can return containers and reclaim deposits. All of these are expected to have at least one Reverse Vending Machine (RVM) which will both accept containers and return deposits.
- Return point locations will primarily be “near” supermarkets (around 3,000 of the total number of return points will be placed on this basis). The proposal aims for a spread of coverage that ensures a return point is available within approximately 500m of every supermarket. Points may serve a single supermarket where stores are more isolated or be located to serve a “cluster” of stores in busier areas. A further 300 locations are planned in high footfall locations.
- The RVMs that accept containers and provide refunds will need additional protection from the elements in outdoor locations, with small scale shelters being described in the proposal.
- Full provision will not be in place by the end of 2022, but the proposal aims for 80% provision at that point, with 1,300 new locations provided, and provision of a further 1,500 temporary return locations at supermarkets. A total of 3,300 points accepting cans is the goal for April 2023, though some of this will still be temporary. Throughout 2023 and 2024 temporary return locations at supermarkets will be replaced with near store provision for cans.
- The 3,300 return locations offering individuals a chance to reclaim deposits will be supplemented in 2023 by 5,000 “voluntary” collection points, where containers can be placed in dedicated collection bins, and the provider of the bins can then reclaim the

¹ Overheid.nl, *Staatsblad van het Koninkrijk der Nederlanden*, 2021, 228, <https://zoek.officielebekendmakingen.nl/stb-2021-228.html>, accessed 25/02/22

² Rijksoverheid.nl, 03/02/2021, *Statiegeld op blikjes een feit*,

<https://www.rijksoverheid.nl/actueel/nieuws/2021/02/03/statiegeld-op-blikjes-een-feit>, accessed 18/02/2022

³ Rijksoverheid.nl, 24/04/2020, *Kamerbrief besluitvorming statiegeld flesjes en uitvoering moties blikjes*, <https://www.rijksoverheid.nl/documenten/kamerstukken/2020/04/24/kamerbrief-besluitvorming-statiegeld-flesjes-en-uitvoering-moties-blikjes>, accessed 18/02/2022

⁴ Following a 2017 study CE Delft, *Kosten en effecten van statiegeld op kleine flesjes en blikjes*, on the anti-litter potential of a DRS for small plastic bottles (targeting a decrease in litter of 70-90%), in 2018, the Dutch government stated an intention to introduce a DRS for these containers if industry could not achieve a comparable anti-litter reduction by other means. This challenge was extended to cans in 2020.

⁵ Afvalfonds verpakkingen, 08/12/2021, *Plan van aanpak toekomstbestendig statiegeldsysteem voor metalen drankverpakkingen*, <https://afvalfondsverpakkingen.nl/a/i/Overige/Plan-van-Aanpak-toekomstbestendig-statiegeldsysteem-voor-metalen-drankverpakkingen.pdf>, accessed 18/02/2022

deposits for charitable purposes. In the long term the plan aims to provide 10,000 of these collection points. It is worth emphasising that deposits cannot be reclaimed by individuals at collection points of this nature.

The Afvalfonds proposal will be introduced in parallel to current DRS provision in the Netherlands, which include long-standing DRS provision for large plastic bottles, and reusable beer bottles. DRS provision for small plastic bottles was added in 2021, in large part building directly onto the existing scheme for large plastic bottles. The small plastic bottles DRS also introduced the idea of the voluntary collection points also seen in the Afvalfonds proposal, where deposits are reclaimed by the provider of the bins for charitable purposes.

Plastic bottles and reusable beer bottles are returned directly to supermarkets in the current DRS approaches in the Netherlands, meaning the proposal for cans will not align with existing practice. **“Return-to-retail” models of DRS, where containers can be returned, and deposits can be reclaimed at the same locations they can be purchased, are the highest performing DRS approach internationally,** and are discussed in more detail in chapters 2.0 and 3.0.

Purpose and structure of the study

Recycling Network Benelux commissioned this study to consider two questions. Firstly, how likely the proposal for DRS provision for cans in the Netherlands is to deliver the 90% capture rate once fully functional, and secondly, how likely the system is to be up and running effectively by the start of 2023. Both of these objectives are legal requirements in the Netherlands.

Eunomia has worked extensively on deposit return systems in countries around the world with governments, manufacturers, retailers, DRS operators, and NGOs. For this report we also conducted targeted interviews with experts and practitioners in the Netherlands, including both “industry” perspectives (a category which groups individuals with expertise and understanding of DRS provision and the beverage market) and “municipal” perspectives (a category which groups individuals with expertise and understanding of waste management, planning, and municipal service provision). Our interviewees overwhelmingly chose to remain anonymous. These requests are respected throughout the report and limit our ability to give specific information and sources relating to the Dutch context in some cases. We have used this expert input to both test the transferability of international experience to the Netherlands, and to highlight unique challenges or opportunities in the Dutch context.

Achieving a 90% return rate means matching the performance of the best systems in the world. Delivering a high-performing DRS is not simply a legal and technical challenge. High-performing DRS's have to put people at the centre of design and delivery, because it is public participation, or the lack of it, that will make a DRS a success or a failure.

The analysis in this report proceeds in stages. The report first outlines the key design choices that determine how well DRS's perform in principle (chapter 2.0), and then highlights what high-performing systems internationally have in common (chapter 3.0).

There is no single factor that alone makes a DRS a success: it is how the design choices interact to shape consumer behaviour that determines performance, and chapter 4.0 applies a

behaviour change perspective to identify how DRS design can best encourage public participation.

The report then switches focus to the Netherlands, and the current plans for a DRS for cans, to see how this compares against international experience, and specifically where this may create performance risks (chapter 5.0). This section also accounts for the specific Dutch operating context, through incorporation of interviews with a range of Dutch experts and practitioners in sectors impacted by the plan. Chapter 6.0 focuses specifically on performance risks raised by interviews in the Netherlands, rather than those stemming from international comparison.

Finally (chapter 7.0), we also examine the potential operational challenges in hitting the 31st December 2022 launch deadline, again based on both international experience, and input from expert interviews in the Netherlands.

A conclusion is provided as chapter 8.0, and a methodological note is provided at the end of the report (chapter 9.0).

2.0 What are the principles of good DRS design?

This chapter first considers general DRS design features, and features associated with high-performance in particular, before focusing in on the factors we consider central to assessing the potential for the Afvalfonds proposal for cans to reach a 90% return rate.

2.1 Overall factors in good design

In a DRS for drinks containers, consumers pay a deposit at the point of sale for containers within the scope, and get the deposit back when they return the empty container for recycling or reuse at a suitable location.

For the rest of this report we focus primarily on single-use containers, not reusable packaging. Cans are single-use by design, and so too are the vast majority of containers passing through DRS internationally, making single-use elements of DRS the most relevant benchmark for this report. However, consumers in the Netherlands are also familiar with DRS for reusable beer bottles, and we do reference this when considering consumer convenience in the Dutch context. We also limit our analysis to national or jurisdiction-wide DRS's, and exclude more limited retailer specific approaches, or pilot DRS's.

Some design features are defined in legislation, while others are determined by the system operator. The decision on which container types and products are targeted is almost always defined by legislation, but many other factors will then determine actual performance. Some of these design choices may be set out in legislation, and others may be decided by the system operator⁶ – the organisation that eventually runs the DRS.

The system operator is usually agreed soon after legislation is passed, to take responsibility for operational planning, rollout, and eventual DRS delivery. System operators typically determine their design choices in consultation with other stakeholders, including regulators, municipalities, drinks manufacturers, and retailers. As an example, in the Netherlands, Statiegeld Nederland is the system operator for the plastic bottles DRS. For the cans DRS, Afvalfonds is performing system operator functions which are required during set up (discussed more in chapter 7.0), including proposing the detailed design for the scheme. This is unusual in international practice, where a dedicated organisation is usually created to both set up and then run the DRS.

This report focuses on assessing a selection of design choices we think will be critical to determining performance of DRS for cans in the Netherlands. There is far more operational knowledge than formal literature on DRS design principles. However, TOMRA does provide a

⁶ As examples, deposit levels are almost always defined in legislation. An obligation for retailer take-back (and any exemptions) is frequently defined in legislation in Europe, while minimum levels of coverage (such as a target number of return locations) are sometimes used in legislation for models with non-retail return.

published analysis of factors seen in high-performing DRS's⁷, and these broadly align with positions set out by industry⁸. Of the twelve factors TOMRA identifies, six relate in whole or in part to consumer experience. **We believe it is these consumer-facing elements of scheme design that are most relevant in assessing the potential to reach a 90% return rate for cans in the Netherlands based on the current proposal.** These six factors are set out below, alongside the six we do not explore further in this report.

Table 2-1 TOMRA's twelve design lessons from high-performing DRS's, split according to relevance for this report

Consumer-facing (in whole or in part) success factors in design and delivery	Operational and governance success factors in design and delivery
<ul style="list-style-type: none"> • Broad scope for both container and beverage types • A “meaningful” deposit level • Convenient redemption system for consumers • Separately charged and fully refundable deposits (i.e. the deposit is visible and receive the full amount back on redemption) • Container markings showing eligibility for consumers (these also facilitate accurate accounting from an operational perspective) • Consumer communications (and, less directly consumer-facing, performance reporting) 	<ul style="list-style-type: none"> • A return rate target • Financing in line with extended producer responsibility principles • Reinvestment of unredeemed deposits and material revenue into the system • Recycled content requirements for containers • Centralised, non-profit, administration and operations • Government enforcement

Source: Eunomia assessment based on TOMRA, *Rewarding Recycling: Lessons from the world's highest-performing deposit return systems*.

Of the six consumer facing factors, the way in which the deposit will be charged and refunded is already established in this case and in line with best practice. We do not consider it further.

The rest of our analysis therefore focuses on the following factors from the above list:

- **A minimum deposit level is set in legislation in the Netherlands, but we do still analyse it as a key factor that will influence consumer participation, and thus scheme performance, in conjunction with wider DRS design choices around convenience.**
- **We focus heavily on convenience in our assessment and look at the number and location of redemption points as critical features in assessing this.** These choices on return model have not been set in legislation for cans in the Netherlands and are therefore a key part of the Afvalfonds proposal.

⁷ TOMRA, *Rewarding Recycling: Lessons from the world's highest-performing deposit return systems*, <https://www.tomra.com/en/collection/reverse-vending/deposit-return-DRSDRS's/white-paper>, accessed 20/02/2022

⁸ See for example Unesda Soft Drinks Europe, Zero Waste Europe, and Natural Mineral Waters Europe, 06/10/22, *It's time to acknowledge the role of Deposit Refund Systems (DRS) in achieving a Circular Economy for beverage packaging in the EU*, <https://www.unesda.eu/its-time-to-acknowledge-the-role-of-deposit-refund-systems-drs-in-achieving-a-circular-economy-for-beverage-packaging-in-the-eu/>, accessed 20/02/22

- **We also emphasise the importance of consumer communications and therefore consumer understanding.** We consider consumer-facing elements of labelling to be part of this, and so have combined these factors from the TOMRA assessment for current purposes. We also anticipate deposit bearing containers will be labelled for consumers in the Netherlands, and this is not central to our analysis.

However, we also add an additional factor, which is critical to supporting both convenience and communications:

- **A single DRS approach that is simple and consistent for the public is in our view a key design feature.** This is not explicit in the TOMRA list though it is relevant to delivering convenience (a single scheme makes life easy for consumers) and an ability to deliver clear communications and consumer understanding (which are simpler if practice and messages are consistent across DRS experiences). It could also be considered a feature of “broad scope”. All DRS models internationally seek to give consumers a single return experience across eligible containers, with single use cans and single use plastic bottles especially always accepted at the same locations once both are in scope for DRS in a given jurisdiction⁹. Our behavioural analysis in chapter 4.0 also supports the identification of this factor as a driver of consumer participation. Chapter 5.0 will highlight that this factor is not a feature of the current Dutch proposal.

Together these give us four design factors that we apply throughout the rest of this report to help assess how likely the proposal for cans is to reach 90% return. The next section outlines in a little more detail what “good” looks like in relation to each, focused on the likelihood they will encourage consumer participation.

2.2 Good design factors central to this assessment

This section outlines in greater detail underlying features of the four design principles selected above as critical to enabling and encouraging consumer participation. **These design features do not stand alone, it is how they come together to create a consumer-friendly experience that will determine if a system can reach very high levels of performance.** Indeed, in this section we combine consistency and communications to highlight how both are essential to delivering consumer understanding.

Our commentary is based on analysis of international DRS design and performance¹⁰, supplemented with operational feedback and insight gathered directly over many years. Chapter 3.0, where we will compare best practice and performance internationally, provides additional quantified analysis to support the analysis here.

2.2.1 Deposit levels

The value of the deposit is an obvious and critical variable in a DRS, and the correlation between deposit levels and performance internationally is mapped quantitatively in chapter 3.0.

⁹ These items pose no unique handling challenges from each other, whereas glass containers, while almost always treated similarly when included in a DRS, may sometimes require different handling requirements or have specific space implications requiring slight deviations in provision.

¹⁰ The most comprehensive published overview of systems internationally is Reloop, 2020, *Global Deposit Book 2020*, <https://www.reloopplatform.org/reloops-global-deposit-book-2020/>, accessed 18/02/2022

Unsurprisingly, higher deposit levels tend to be associated with higher performing DRS's, but this is not a straightforward relationship as the other design choices make a significant difference to actual outcomes. A high deposit provides a strong incentive to participate, all other things being equal, but must be considered in relation to any barriers to engagement. However, if deposits are low, and the economic incentive is therefore weaker, then delivering convenience, or reliance on existing habits, will be even more important.

2.2.2 Convenience

The number, and location, of return points are also critical choices in DRS design, as both will help determine DRS convenience for consumers. More return points means more return opportunities, with shorter average distances for consumers to travel to return containers. An objective high-level analysis of convenience based on numbers alone is performed in chapter 3.0.

However, the distribution of these points also needs to match container flows – aligning provision with the places people want to return their containers and reclaim their deposit. This is a consideration both in volume terms (i.e. greater overall return capacity in areas where more containers are being returned), and in terms of behavioural convenience (i.e. providing return opportunities in places people can both easily reach and are willing to go to).

Internationally, there are two broad approaches to providing return points in a DRS. In “return-to-retail” models, places selling the containers in question also take them back and refund deposits. In “return-to-depot” models there are typically a much smaller number of dedicated return centres.

European DRS's are almost all return-to-retail¹¹, while DRS's in Australia, and many in North America, are depot DRS's¹², though some of the latter have “hybrid” elements (where some but not all return points are located at retail sites). A common design feature of return-to-retail models from a legal perspective is that retailers are legally obliged to take back containers, ensuring their participation, although they also usually receive a handling payment per container to cover some or all of their costs.

The Afvalfonds proposal is hard to classify in international terms. With some return locations at supermarkets and some off-site, it is arguably a hybrid model, but it does not closely match how such models are delivered elsewhere, with extensive use of unstaffed return locations, and divergent provision for cans as opposed to other containers charging a deposit.

Return-to-retail provides a close match to both container flows and behavioural convenience by default, as it makes return locations broadly the same as sales locations, and so matches return opportunities closely with container origin. TOMRA's lessons from high-performing DRS's stresses the value of retailer involvement in return¹³, while Unesda and Zero Waste

¹¹ Iceland is a rare exception, and does manage a high return rate, however its geography and retail market is exceptional in European terms.

¹² Note that while often referred to as “deposit” DRSDRS's, DRSDRS's in Australia actually offer a “refund” when an item is recycled. This can seem superficially similar from a consumer perspective (though it is technically a “reward” for recycling rather than a deposit), but the financing of such a DRS is divergent from conventional DRS models.

¹³ TOMRA, *Rewarding Recycling: Lessons from the world's highest-performing deposit return systems*,

Europe stress the importance of both return-to-retail options for consumers, and the value of retailer involvement in management¹⁴. In chapter 3.0 we compare performance in return-to-retail and return-to-depot systems, to demonstrate the convenience of the former also correlates with better performance, despite diversity within both approaches¹⁵.

In deciding on the number and location of return points, consumer convenience should be the key consideration, and this is a key feature of chapter 3.0. Chapters 3.0 and 4.0 also consider the format of return locations, in terms of what containers can be returned where. Internationally provision of common return points for all single use containers eligible for a deposit in the norm.

2.2.3 Consistency, communication, and understanding

Public understanding is easily overlooked, but it is absolutely essential and is delivered through both factors relating to consistency and to communications.

The system design can greatly facilitate understanding with clear and consistent choices around the materials and products included, and minimal (if any) variation in either deposits charged or return arrangements.

Additionally, the system must communicate all this to consumers, covering practical “how” and “where” knowledge requirements, but also making sure people know “why” they are participating. Motivation to participate in a DRS does not come from the economic incentive of the deposit alone. That incentive will be offset against any difficulties of participation, and further helped or hindered by wider motivational factors. Motivation is discussed further in chapter 4.0, in particular in the context of how system design, delivery and communications can facilitate people’s willingness to participate.

If scheme design is not both simple and consistent, and clearly communicated, then consumers will find the DRS difficult or inconvenient to use, hard to understand, or both.

¹⁴ Unesda Soft Drinks Europe, Zero Waste Europe, and Natural Mineral Waters Europe, 06/10/22, *It’s time to acknowledge the role of Deposit Refund Systems (DRS) in achieving a Circular Economy for beverage packaging in the EU*,

¹⁵ Return-to-retail models provide both more return points, and return points aligned with shopping patterns. We do not seek to separate these mutually supportive factors out.

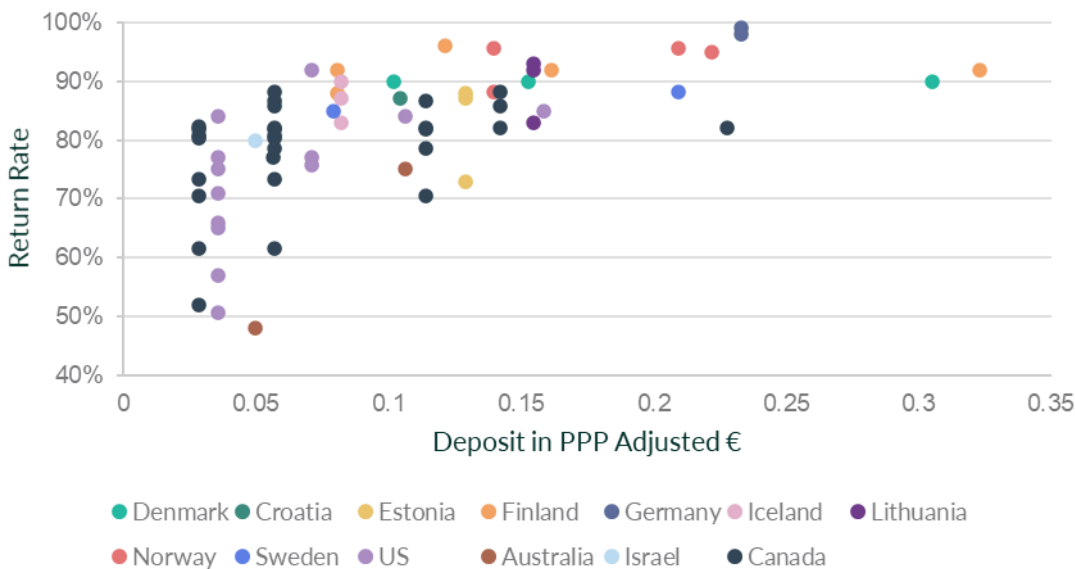
3.0 What do high-performing schemes have in common?

This chapter provides quantitative analysis of how deposit levels and the convenience of scheme design correlate with performance internationally. It also considers international evidence in relation to consistent scheme design and communications.

3.1 Analysing deposit level

The best performing schemes tend to have higher deposits, but we do sometimes see higher performance in lower deposit countries and vice versa. In the graph below some countries appear more than once, reflecting differential performance or delivery across different container types. The deposit levels below are adjusted for purchasing power parity. Even with that adjustment, DRS's in Northern Europe and Scandinavia tend to have the highest deposit levels, and best performance. **Overall, while high deposit schemes tend to have better performance, this is not universal, demonstrating that other design features are essential.**

Figure 3-1 International DRS performance compared to deposit level



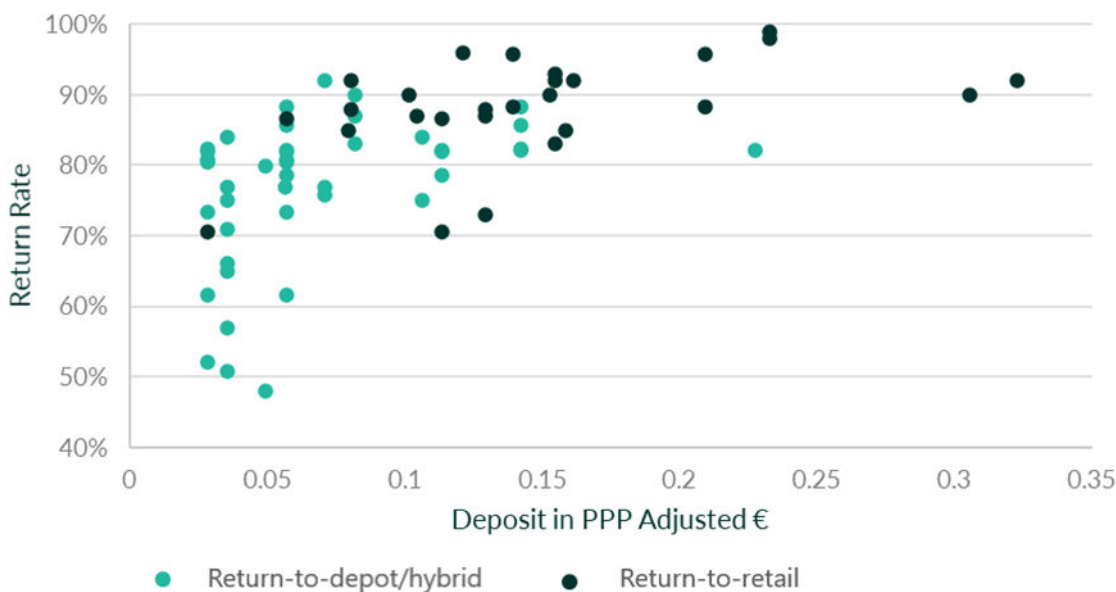
Source: Eunomia internal analysis, based on data from Reloop, *Global Deposits Book 2020*

3.2 Analysing convenience

Convenience is another factor that closely correlates with performance. Two ways to assess convenience were identified in chapter 2.0. **One way to compare convenience is to consider the match between return locations and pre-existing ways of living and working for the public, with return-to-retail return approaches identified as preferred for this purpose** in chapter 2.0. Quantitatively, we see that return-to-retail models do in fact perform consistently better. Figure 3-2 repeats Figure 3-1, but with return model for DRS's¹⁶ shown instead of country, and we see better performance is not just associated with higher deposits, but also with systems that closely link beverage sales and container return opportunities, i.e. return-to-retail. Note this analysis combines return-to-depot and hybrid models.

Return-to-retail alone does not guarantee very high return rates any more than a high deposit does, and we can see some return rates below 90%, despite having a return-to-retail model. This is however very rare in DRS's combining both a high deposit and return-to-retail design features, and the best return-to-retail DRS's consistently outperform the best return-to-depot models.

Figure 3-2 International DRS performance compared to deposit level, highlighting system return model



Source: Eunomia internal analysis, based on data from Reloop, *Global Deposits Book 2020*

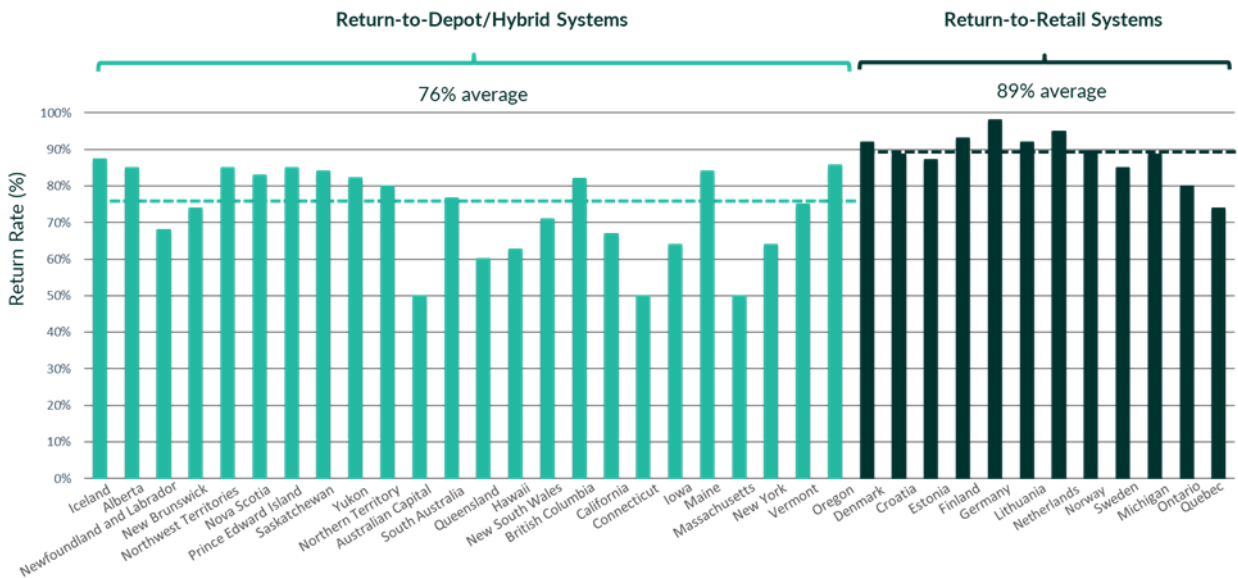
Additionally, **only DRS's with a return-to-retail design currently achieve 90% return rates, as mandated in the Dutch target¹⁷**. Figure 3-3 shows both those schemes reaching 90%, and the overall average return rate for return-to-retail versus other models. Return-to-depot and hybrid DRS's are combined in this analysis on the same basis as before. If analysed separately,

¹⁶ This analysis follows Reloop, *Global Deposit Book 2020*, in DRS categorisation.

¹⁷ Palau (90%) is an exception, but is not applicable to the Dutch context in our view

hybrid models actually perform worse in the aggregate, but with very divergent performance between them¹⁸. Detailed analysis of this data also shows that depot models performing above 80% are typically in jurisdictions with very low populations and population density¹⁹. The Afvalfonds proposal falls short of the level of provision delivered by return-to-retail models internationally, and in existing Dutch experience. However, it does not align closely with either depot or hybrid models deployed outside of Europe either, for reasons discussed in chapter 2.0.

Figure 3-3 Return rates across two broad approaches to DRS design



Source: Eunomia internal analysis, based on data from Reloop Global Deposits Book 2020

Another way to consider convenience is by looking at the provision of return points per person. National context matters, as coverage can be more efficient in densely populated areas, but we nonetheless see relatively consistent provision in Europe²⁰.

Table 3-1 shows a count of automated Reverse Vending Machines (RVMs) per 10,000 people across different European countries. RVMs account for the vast majority of returns in most of these DRS's²¹, and we present this as a useful comparator for *RVM provision* for the Netherlands (which only offers RVM return in the current proposal for cans) in chapter 5.0. Both internationally and in the Netherlands, locations may have multiple RVMs where return levels are particularly high, so there are usually slightly more RVMs than there are unique locations with RVMs.

However, counting RVMs significantly understates the number of return locations available overall, as other European DRS's supplement automated return with opportunities for manual

¹⁸ Reloop, February 2021, *Fact Sheet: System Performance*, <https://www.reloopplatform.org/wp-content/uploads/2021/02/Fact-Sheet-Performance-16FEB2021.pdf>, accessed 20/02/2022.

¹⁹ Saskatchewan and Alberta are the only jurisdictions with a return-to-depot model, a return rate of 80% or more, and a population of over 1 million people; Iceland, Northern Territory, Northwest Territories, Prince Edward Island, and Yukon all have populations under 0.5 million. British Columbia, Maine, and Oregon are larger jurisdictions that exceed 80% return, but are classified as hybrid models.

²⁰ The discussion in the next paragraph is based on data from Reloop, *Global Deposits Book 2020*, except for RVM numbers, which were sourced by Eunomia and Recycling Network Benelux from international contacts.

²¹ In Norway 97% of containers returned come via an RVM; in Germany the figure is 85%.

return, and the overall number of return locations can be considered a key feature of overall convenience for consumers. In Norway for example, although almost all returns by volume are made through the RVMs, there are a further 11,400 manual take-back points, which, if included, gives a figure of 28 return locations per 10,000 people. Lithuania has fewer additional opportunities for manual return than Norway but including these additional return options still doubles the number of return points available and gives 10 return locations per 10,000 people. It is worth emphasising that these manual return locations both accept containers *and* refund deposits. They are therefore quite unlike the existing (for plastic bottles) and proposed (for cans) voluntary collection opportunities in the Netherlands where no deposit fee is given back to the consumer.

Table 3-1 Reverse Vending Machine (RVM) provision in European countries

Country	Population Density (person/km ²)	Total Population	RVMs	RVM density per 10,000 individuals
Denmark	135	5.8 million	3,000	5.2
Germany	232	82.9 million	44,000	5.3
Estonia	29	1.3 million	700	5.4
Finland	16	5.5 million	4,000	7.3
Lithuania	43	2.8 million	1,000	3.6
Norway	16	5.3 million	3,700	7.0
Sweden	22	10.0 million	5,100	5.1

Source: Eunomia internal analysis supplemented by data from Reloop Global Deposits Book 2020, and Recycling Network Benelux. Croatia is excluded due to a lack of data at time of writing and a reported high dependence on manual return, and Iceland is excluded as a depot model with low levels of automation on launch.

3.3 Consistency of provision and communications

Neither of these factors is amenable to additional quantitative analysis. In the case of consistent user experience across container types however, this is due to the lack of counterexamples to consistent provision, rather than a lack of data.

We do not know of any major DRS internationally where return locations are not the same for small plastic bottles and cans. Glass provision can sometimes differ slightly, but this is usually a case of a return location accepting glass manually and other items via an RVM (and single use glass is not included in national DRS provision as often as cans and single use plastic bottles in any case).

The only other source of divergent return point takeback can be at smaller manual take back locations. In some countries these may be allowed to impose limited restrictions on return (either on the number of containers accepted in a single transaction, or restricting return to container and product types directly sold in store²²). There are also occasional variations in deposit level between container types (most frequently with a higher deposit charged for large containers).

Governance arrangements and operational design can and do vary significantly for different container types, but **for customers, return points are almost always comprehensive for all eligible items.** When DRS's have expanded the range of products or container types in scope, this has aligned with existing provision of return locations for all items in DRS scope in a market²³.

It is not possible to objectively compare communication efforts internationally, and the requirement for communications may vary as DRS's become established. But there is no doubt that communications are a key factor in participation, especially at launch²⁴. More consistent DRS's will be easier to communicate. Communicating differing provision of return locations for cans and small plastic bottles in the Netherlands may be particularly challenging and has not been attempted elsewhere.

²² This is usually due to space constraints, although many small retailers are happy to take more containers than they are obligated to, as it may be good for attracting customers.

²³ Finland and Sweden both expanded DRS for cans to provision for both cans and plastic. Denmark (2020) and Germany (2022) have more recently expanded product scope.

²⁴ TOMRA, *Rewarding Recycling: Lessons from the world's highest-performing deposit return systems*. Infinitum (the national DRS brand) in Norway is cited as an example of excellent consumer communications, while in Lithuania legislation mandates a minimum level of communications spend.

3.4 Determining participation and performance

Overall, high-performing systems internationally achieve a balance of the four factors we identified in chapter 2.0 as critical to consumer experience and thus participation.

To achieve a 90% return rate is extremely challenging, and very few containers can afford to be “lost” from the scheme. Good design needs to deliver individual design factors well and combine them into a winning formula overall. No one factor determines success, and it is theoretically possible to balance a weakness in one area with a strength in another. However, **an accumulation of even minor weaknesses is likely to make a 90% capture rate unlikely, as even marginal performance losses will quickly add up.**

Only a small number of countries deliver 90% capture rates. There are national differences, but high-performing DRS's for cans successfully combine:

- **A deposit level that provides a meaningful economic incentive for participation.**
 - This can vary by circumstance: Germany has a deposit level of €0.25, and a world leading return rate of 98%, while Lithuania achieves a 92% return with a deposit of €0.10.
 - At lower deposit levels, other performance factors may be more critical to high performance.
- **A return point network that is both geographically close to, and behaviourally convenient for, people's existing modes of living and working.**
 - Return-to-retail models score higher on objective measures of provision, and logically fit better to existing patterns of behaviour (discussed more in chapter 4.0).
 - While most containers are likely to be returned via RVMs, the provision of manual return opportunities at smaller retail sites significantly expands the number of return opportunities, and thus consumer convenience. This may seem a lot of additional return opportunities to provide for a relatively small number of containers, but marginal performance gains may be important to reach very high return rates.
- **A single system that is simple and consistent for the public.**
 - We do not know of any major DRS with variations between plastic bottles and can DRS return opportunities (where both are eligible for DRS in a country). In both return-to-retail and depot DRS's, return points accept and refund all eligible containers as the default.
 - Additionally, expansions in DRS scope have involved adding to the container types that can be returned at existing return points rather than provision of separate locations.
- **Clear and effective communications in support of the above.**
 - DRS's need to be well designed, and they need to communicate clearly. Simple and consistent design will make communication easier for the DRS and require less effort to understand and participate from the public. Communications will relate not just to campaigns, but labelling on containers, and signage at retail locations.

4.0 What does a user-friendly scheme look like?

As already stated, a high return rate is entirely dependent on a high level of participation, and the scheme design and delivery are key to enabling and encouraging this. The previous chapter highlighted key elements in DRS design that objectively link to high performance, and we can see how these logically influence consumers: deposit levels and economic reward; provision and convenience; and both simplicity and communications as key to facilitating understanding.

Additionally, we should not underestimate intrinsic motivations, such as the desire to do the right thing, as these too are a key feature of how consumers will interact with a DRS. This may seem independent of system design, but a good scheme, performing and communicating well, can support this, both directly and by creating and sustaining social norms. Conversely, if people have bad experiences of a scheme this may have the opposite effect.

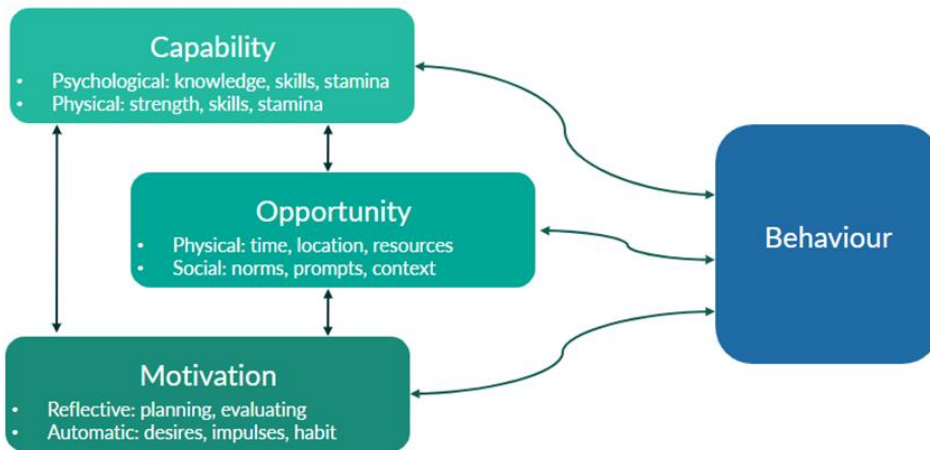
All these features can be seen if we take a behaviour change perspective on a deposit return system. We do so here to test the design factors we identified in chapters 2.0 and 3.0, and to inform detailed analysis of the Afvalfonds proposal in chapter 5.0, where public participation will be a key determining factor in whether the proposed scheme can reach 90%.

4.1 Behavioural enablers and barriers in DRS

The “COM-B” behaviour change model is widely used around the world to assess policies to change behaviour²⁵. Applying it to the current case: **pro-environmental behaviour is dependent on people’s capacity to act, their opportunities to do so, and their motivation to do the right thing. To deliver change all three drivers need to be sufficiently addressed.** Additionally, in a good intervention, these drivers will tend to mutually reinforce each other.

²⁵ See, for example, Michie, S, Chadwick, P, Atkins, L, Lorencatto, F, West, R, 2020, *Achieving Behaviour Change: A Guide for National Government*, Public Health England, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/933328/UFG_National_Guide_v04.00_1_1.pdf, accessed 20/02/2022

Figure 4-1 COM-B Behaviour Change Model



Source: Adapted by Eunomia²⁶

For consumers targeted by a DRS, key considerations for each of these factors are highlighted below. **A good system from a user perspective is not about creating a minimum level of coverage, but about ensuring coverage makes participation easy.** The factors that are most important will vary by individual, and to capture 90% of containers a DRS will have to work well for the vast majority of the population.

Table 4-1 COM-B opportunities in a DRS

Behavioural driver	How can DRS design and provision best support return behaviours?
Capacity	<ul style="list-style-type: none"> • Minimise the cognitive burden – clearly identify what can be returned, where, and when, and keep it simple and consistent • Minimise the time and effort required for returning containers, so people can fit it in to their lives • Minimise barriers to access across all demographic groups, in all locations
Opportunity	<ul style="list-style-type: none"> • Provide return points that are accessible and easy to use – both nearby, and easy to integrate into people’s existing activities and habits
Motivation	<ul style="list-style-type: none"> • Provide an economic incentive to return containers via the deposit • Provide a social signal that returning containers to be recycled is normal and desirable, through DRS design and provision, communications, and the creation of a social norm • Support the desire to do the right thing to help the environment

²⁶ This is our preferred portrayal for the case of DRS. For more general presentations, see, for example, Decision Lab, *The COM-B Model for Behavior Change*, [https://thedecisionlab.com/reference-guide/organizational-behavior/the-com-b-model-for-behavior-change/#:~:text=The%20COM%20model%20of,at%20that%20moment%20\(M\).](https://thedecisionlab.com/reference-guide/organizational-behavior/the-com-b-model-for-behavior-change/#:~:text=The%20COM%20model%20of,at%20that%20moment%20(M).), accessed 20/02/2022

Source: Eunomia analysis

There is significant overlap between the capacity and opportunity headers above. Good provision lowers barriers and so improves people's ability to participate. **One reason return-to-retail DRS's perform better internationally is the ease with which return behaviour can be integrated with pre-existing habits.** People who buy containers and return containers are generally the same people, and already go to retail locations for these products on a regular basis. Concerns around specific demographics (those with mobility challenges for example) are also addressed this way as no extra journeys are required. From a consumer perspective, the Netherlands will be expanding DRS provision to additional containers when DRS for cans is launched, and the specific impacts of this on habits, expectations, and convenience are assessed in chapter 5.0.

Habit is also an important behavioural consideration. When a system is new, people will think about how they interact with it. Once it is established, they will typically keep doing the same thing with much less reflection. This means people's experience of the DRS when habits are forming can be particularly important. This should be considered when considering how comprehensive any new DRS will be at launch (discussed in chapter 3.0), and in terms of how people understand the change to "existing" DRS provision. **Internationally there are no cases of split provision of DRS return between plastic and cans (assuming both are in scope in a jurisdiction), and in the Netherlands people's default expectation will be for consistency too.** A lack of consistency reduces opportunities to build on existing DRS behaviour and will make messaging across different container types more complex.

4.2 Social motivations

The motivation section of Table 4-1 in the previous section mentions social desirability. People do not simply decide to participate based on the economic reward and the personal convenience of participation. This is proven by the fact many people already return containers for recycling in the absence of a DRS. **Therefore, beyond the level of individual behaviour, society as a whole also has an interest in a well-functioning and high-performing deposit return DRS.**

4.2.1 The financial cost of a poor performing DRS

Every container that is not returned costs the consumer money, as they forfeit their deposit. In a highly convenient system, we see very high return rates, and thus little economic cost being imposed on consumers in this way. Where containers are not returned, we can truly say that consumers are "choosing" not to do so.

However, if a system is not convenient or accessible to all, then some people may be forced to either forgo their deposit or make a disproportionate effort to reclaim it. This is one reason why a system must consider all demographic groups in design: elderly people, people that shop with small children, or people with mobility difficulties may particularly struggle with DRS provision that does not fit into the places they already go to and the journeys they already

make. These groups may also be those least able to afford to forfeit deposits. A scheme that is seen to discriminate will lose wider support.

The social desirability of convenient return is underlined by the financing of a DRS scheme. Schemes receive income from three sources: unredeemed deposits, the sale of the material they collect, and finally fees paid by industry to cover any gap between the first two and the overall cost of the system. **High levels of unredeemed deposits therefore have the effect of reducing industry costs.** This is unlikely to seem fair to the public and may undermine public support for the scheme. **This risk is eliminated by good design and high performance,** and several of the twelve lessons from high-performing schemes identified by TOMRA and mentioned in chapter 2.0 are designed to avoid exactly this danger. However, if the Dutch scheme falls significantly short of 90% returns, these kinds of objections will be made, and the DRS could come to be seen as an imposition, rather than an opportunity; this risk is returned to briefly in chapter 5.0.

4.2.2 The environmental benefits of a high-performing DRS

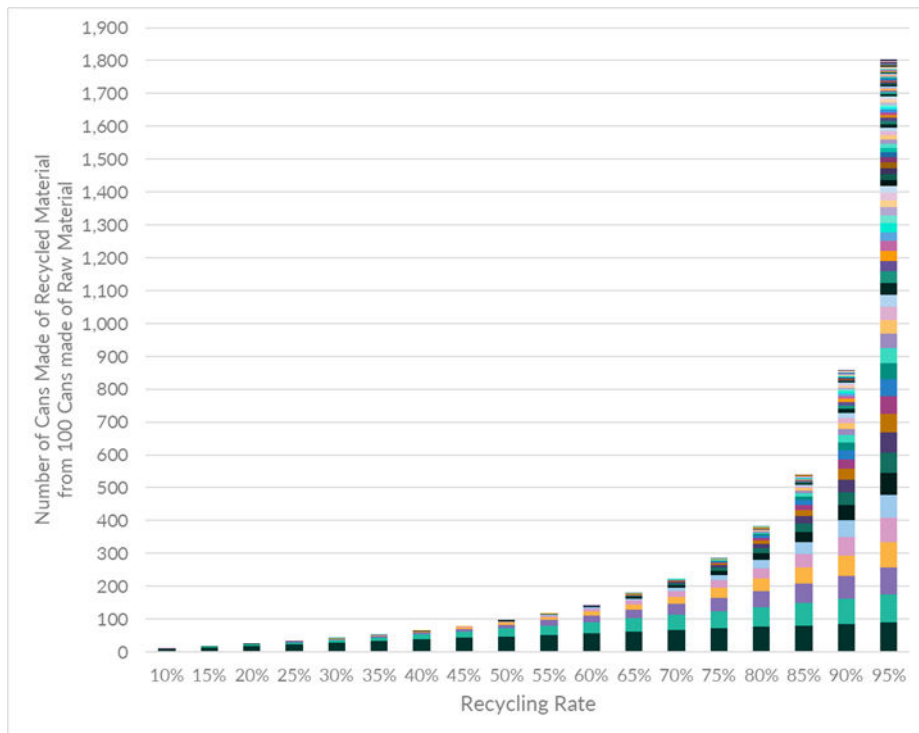
A 90% return rate would place the Netherlands among the best performing schemes in the world. The anti-litter benefit of DRS was identified as a key policy driver in chapter 3.0, with modelling of DRS for small plastic bottles suggesting the benefits could be between a 70% and 90% reduction in litter for the containers targeted by DRS²⁷. **The anti-litter benefit will be higher the better the system performs, and facilitating high participation is again key to good performance.** Behavioural factors for anti-litter effects are slightly different to those for container return more generally. The literature typically focuses on the economic incentive of the deposit as making the difference to people's motivation. This may stop individuals littering, as the behaviour now has a direct financial cost, and it may also encourage citizens to pick up litter they see on the ground, as they can now claim a reward. In both cases though, ease of redemption makes it more likely the economic incentive provided by the deposit is in fact acted upon, so convenience remains a critical factor.

A final factor that is worth highlighting is around the return rate and the recycling that results. Every time a can is returned and recycled the material saved displaces raw material extraction, making our economy more linear. In a high performing system, the material in a can does not just get recycled once, it gets recycled again, and again, again. **The difference between an 80% return rate and a 90% return rate is not just the difference between missing and hitting a target, it represents a very large environmental saving, and one that increases disproportionately as performance improves.** Figure 4-2 shows that of 100 cans sold, if 80% are consistently returned and recycled, nearly 400 cans can be made over successive return and recycle sequences before the material is lost. At 90% return, 100 cans can be remade into over 850 cans over successive return and recycle sequences before the material is lost. **Delivering a high return rate in a DRS, and showing the public that high performance is a partnership between the scheme, retailers, and the public themselves, is potentially a**

²⁷ CE Delft, 2017, *Kosten en effecten van statiegeld op kleine flesjes en blikjes*

powerful tool in creating social norms that further encourage participation and so maximise environmental benefit.

Figure 4-2 Material retention as capture and recycling rates improve in a DRS



Source: Eunomia analysis. Each colour shows the number of cans made on each successive return and recycle sequence. At 80% return, the first sequence returns 80 cans, then 64 cans, then 51 cans, and so on. At 90% return, the first sequence produces 90 cans, then 81 cans, then 73 cans, and so on.

5.0 Performance risks compared to high-performing schemes

This section considers the key success factors identified in chapter 2.0, lessons from international experience in chapter 3.0, and the behavioural factors identified in chapter 4.0, to compare the current Afvalfonds proposal against international design principles and therefore assess how likely it is that the current Afvalfonds proposal can achieve a 90% capture target for drinks cans once the DRS is fully operational²⁸. Dutch law requires a 90% capture rate by 2024. Both knowledge of international practice and expert interviews in the Netherlands inform the analysis in this section.

For the purpose of this analysis, we assume that the DRS, once fully rolled out, will work as described in the proposal by Afvalfonds, and summarised in chapter 1.0. This would mean 3,300 locations where deposits can be redeemed, and that a return point is available within approximately 500m of every supermarket. We do however also highlight where expert interviews suggested practical barriers to achieving this goal.

On launch, the proposal for cans is more modest, with around approximately 1,300 RVMs in new locations, and a further 1,500 return opportunities provided by supermarkets to give 80% coverage, though expert interviewees expressed serious concern about the lack of detail to date on how interim arrangements will work, and, in some cases, the potential long-term impacts on behaviour from either incomplete or changing provision. We have not analysed performance at this level explicitly – the proposal acknowledges there will be a ramping up period in provision, and the 90% target is not due in the first year of operation. **As an international benchmark for a successful DRS launch, the DRS in Lithuania achieved 74% capture in year one, and reached 92% in year two²⁹.**

We focus on three key performance risks in this chapter, driven by international comparisons, and supplemented by expert interviews in the Netherlands. Chapter 6.0 highlights two additional risks which were highlighted primarily by expert interviews in the Netherlands, but do, in our view, also pose performance risks to the scheme.

²⁸ We note that Dutch law allows for this target level to be reached with up to ten percentage points of the contribution coming from alternative capture methods outside of the DRS, if this material is of comparable quality to separate collection. The comparability requirement is likely to be difficult to meet, and internationally, we know 90% capture from DRS alone is feasible with a well-designed system. We therefore assess the Dutch proposal against a direct DRS capture rate of 90%.

²⁹ Open Access Government, 24/04/2018, *Recycling: Lithuania deposit system exceeds all expectations*, <https://www.openaccessgovernment.org/recycling-lithuania-deposit-system-exceeds-all-expectations/45003/#:~:text=By%20the%20end%20of%202016,containers%20in%20Lithuania%20were%20returned>, accessed 20/02/2022

5.1 Inconsistent DRS provision for plastic bottles and cans

This section focuses primarily on consumer experience, which we consider central to the potential impact on performance, but also highlights operational challenges split provision may pose for a cans DRS.

5.1.1 Consumer experience resulting from split provision

Chapters 2.0 and 3.0 stressed the importance of both convenience, and a simple and consistent scheme, as essential design elements of high performing systems. Chapter 4.0 emphasised the behavioural rationale for the importance of these factors. **In our assessment the fact that DRS approaches for cans and plastic bottles will diverge in the Netherlands falls short of practice on consumer convenience and scheme consistency seen elsewhere.** It is therefore highly likely that more containers will be “lost” with this scheme than would be the case with the kind of harmonised approach across containers that is pursued nearly universally elsewhere.

Although the current plan is for cans, the Netherlands already has a deposit return system in place for plastic bottles (both large and small) and for reusable beer bottles. This will mean that in 2023, and until or unless the DRS's are fully harmonised, return of single use cans and plastic bottles, both of which will have a deposit, will frequently need to be done in different locations, necessitating extra trips for people that wish to return both kinds of containers.

This is a clear inconvenience to consumers and would be expected to pose barriers to both can and plastic bottle return. Several expert interviewees strongly suggested that cans would be expected to suffer worse from performance impacts in this regard, given that cans will be both new (and therefore not established as a DRS behaviour) and the less convenient return location model (see section 5.2).

Cans are not a small container stream in the Netherlands, representing around 2.2 billion containers. This implies that with split provision around half of all deposit bearing items in the Netherlands would be cans, and be directed to one set of locations, while the rest would be directed elsewhere. **The substantial proportion of cans in the overall container market in the Netherlands significantly increases the likelihood individual consumers need to use both sets of infrastructure, and so experience the inconveniences of split provision in practice.**

Additionally, the new approach for cans will represent a departure from the current deposit return approaches people are familiar with, with the expectation of in-store return. This removes opportunities to maximise fit with existing DRS return habits for the benefit of the new cans DRS provision, the importance of which for maximising participation was discussed in chapter 4.0.

The phased roll out of cans provision proposed also means the consumer experience, for cans and potentially plastic bottles (depending how this is handled), will change at local level over an extended period. The plan identifies changing provision for cans across 2023 and 2024 (with initial temporary supermarket provision for cans in some locations but not others, which is then phased out as all the new “near” supermarket locations are completed). From a behaviour change perspective, this will pose particular challenges in communicating the DRS at national and local levels, as both the national DRS and specific local provision will need to be accurately conveyed. It may also cause problems in establishing and maintaining habits for return behaviour with the public.

Overall, this lack of a single “national” deposit return DRS will make communication much more challenging for both cans and existing materials, and could be a major source of user confusion and frustration.

Where can and plastic bottle DRS provision differs, the burden of participation for consumers will be higher, even if they fully understand the DRS’s for both materials. Although not single use containers, current DRS provision for reusable beer bottles in the Netherlands could fragment this consumer experience further (i.e. harmonising cans and plastic out of store would still leave reusable provision in store).

Overall then, split provision falls short of some of the key design elements associated with high performance in previous chapters. It means more than one trip will be needed to participate in DRS for users of multiple container types, that understanding local provision will be harder, and that entirely new habits will need to be established for returning cans to a DRS compared to plastic bottles. Communication will be more challenging as a result, and more cognitive as well as physical effort will be needed from consumers to participate across different container streams. The transition period in 2023 and 2024 is likely to add to these effects. **It is our assessment that these barriers to participation will significantly lower performance for a cans DRS compared to provision that was integrated with existing consumer DRS experiences.** We also consider it a risk that split provision impacts not just cans but existing DRS services too, for similar reasons.

5.1.2 Operational impacts of split provision

There was broad consensus among our Dutch interviewees on both the industry side and in municipalities that integration of DRS provision for cans into existing DRS provision in the Netherlands would make for a much better user experience. **Additionally, the challenges of integrating cans into the existing plastic bottle DRS in the Netherlands were not prohibitive in the view of interviewees with industry experience.** This suggests that the higher-performing model internationally – that of integrated provision across containers, delivered at retail locations – would be achievable in the Dutch context.

Some interviewees additionally suggested any integration challenges that did exist would be lower than the challenges of creating alternative provision, and stressed potential operational benefits, not just consumer-facing ones. All existing RVMs in the Netherlands could already be set to identify cans and refund consumers, and at least one site in the Netherlands has

demonstrated this is possible in practice, by equipping their existing RVM to accept cans and offer a small reward³⁰. However, there might need to be changes at the backend of the machines in some locations³¹. Financial arrangements around handling fees to retailers for participation could be comparable for both cans and small PET, and this would maximise the profitability of the investment in existing RVMs for plastic bottles.

In contrast, separating provision was expected to create inefficiencies in terms of wider operations by our industry interviewees. A parallel system for cans will also mean parallel logistics. Current plastic bottle recycling via the existing DRS uses reverse logistics within the supermarket supply chain, and so collections arrangements for cans will have to be wholly additional (and if plastic bottles are moved out of supermarkets in future, they too would need separate haulage arrangements). In the Netherlands, many retailers have invested in “counting centres”³² at their own distribution hubs as well; provision that fits with current PET operations, but will not align with a new out of store DRS. This is discussed further in section 0, as it is more directly relevant to the challenges of meeting the launch deadline than performance. However, indirect effects on consumers may arise from less efficient servicing of return points, this is discussed more in section 5.2.

An eventual integration of can and plastic bottle return, at the new “near” store locations, is implied in the Afvalfonds proposal, but not necessarily expected by all our interviewees. Two interviewees stated they expected supermarkets would be keen to retain plastic bottle returns in store, given the investments in infrastructure to date, or the desire to maintain positive experiences consumers have already come to expect. Therefore, at least during the transition period, and possibly beyond, the proposal for cans means “doubling up” some RVM provision, rather than optimising the use of existing RVMs, while providing no additional user benefits (and indeed disbenefits where consumers have to use two locations for different items). Integrating cans and plastic bottles away from stores would still leave reusable bottle provision in store. **This observation implies that even after the can DRS is fully delivered in 2024, DRS provision across materials is highly likely to be less integrated than in other schemes internationally. Therefore the performance risks around split provision identified in section 5.1.1 are likely to be long term features of the Dutch DRS landscape under the current proposal.**

³⁰ Omroep Flevoland, 02/02/2022, *Blikjesautomaat in supermarkt een succes: "Anders ligt alles op straat"*, <https://www.omroepflevoland.nl/nieuws/271283/blikjesautomaat-in-supermarkt-een-succes-anders-ligt-alles-op-straat>, accessed 20/02/2022

³¹ The majority of RVMs in the Netherlands do not currently have compaction abilities (which means they can compress returned containers into a much smaller space for storage and transit. Adding this would make handling of both extra and existing containers much more efficient, but the lack of compaction does not preclude adding cans to the system. In some locations, where the combined volume of containers was too big for the existing machine, a second might need to be installed; in many cases though, the existing RVMs would simply be operated closer to capacity. Combined can and PET services are the norm for RVMs internationally. Eunomia believe, based on international experience, that while some changes might be needed for other existing system infrastructure (such as counting centres) if cans were added, this is technically feasible and would not be a major investment; if additional infrastructure is needed for increased container volumes, then this will be the case anyway, and does not represent an additional cost of integration.

³² These verify the number of containers returned and are a key component of system integrity.

5.1.3 Split provision as a performance risk

Split provision of DRS experiences for single use cans and plastic is not a feature of any major DRS internationally, where both materials are in scope. This observation holds true for both return-to-retail and return-to-depot models. In the Netherlands, reusable beer bottle DRS provision is also a factor in considering the integrated consumer experience.

Split provision for cans and plastic bottles falls short of three of the design principles highlighted earlier in this report:

- It does not provide convenient return points as well as integrated provision (as consumers have to visit two locations rather than one to return containers)
- It does not provide a simple and consistent experience
- It will therefore be harder to communicate and understand than integrated models seen elsewhere.

Additionally, the ongoing changes in provision for cans in 2023 and 2024 are likely to exacerbate these challenges.

The impact of split provision cannot be quantified, as this model is not pursued in schemes elsewhere. However, it clearly raises behavioural barriers, most obviously relating to both physical and cognitive effort to participate. It may also be demotivational as it runs counter to expressed citizen preferences (see section 5.2). Our assessment is that split provision is likely to persist beyond 2024, but even if it does not, this initial experience of the scheme may have lasting effects on consumer perceptions and motivation.

Split provision will deliver lower performance than integrated provision at convenient locations. **As very few containers can be “lost” if the system is to reach 90% returns, split provision poses a significant risk to target achievement.** This risk is in our view made greater when considered in conjunction with the relative convenience of return locations for cans relative to existing DRS provision, discussed in the next section.

5.2 The scale and nature of return point provision

Public participation is key to DRS performance, and very high levels of participation will be needed to reach a 90% return rate, as mandated in Dutch law. **As discussed in the previous chapters, the convenience of return points is a major factor in the overall user friendliness of a deposit return DRS, and thus the likelihood people will participate.** Design features associated with convenience correlate with high performance.

Convenience can be assessed in two ways, by looking at both the number of return opportunities provided, and by looking at the specific locations that are provided, and their fit to existing patterns of behaviour.

5.2.1 The number of return opportunities in the proposal

Looking at the number of return points alone (Table 5-1), the Afvalfonds proposal for cans will have a very low *provision of RVMs* given the size of the Dutch population compared to international return-to-retail models, with around 2.5 RVMs per 10,000 people³³. This is lower than other European DRS's analysed in Chapter 3.0 (Lithuania is closest with 3.6 RVMs per 10,000; all others are above 5 RVMs per 10,000).

The number of RVMs in the Afvalfonds proposal matches current provision of RVMs for PET in the Netherlands³⁴, though some expert interviewees in the Netherlands indicated that the number of *redemption opportunities* (i.e. unique locations where containers can be returned and deposits can be reclaimed) for plastic bottles is higher than the number of redemption opportunities proposed for cans.

Additionally, if we consider all locations where containers can be returned and deposits can be redeemed, there are many more opportunities in the highest performing international schemes, due to the provision of manual return points as well as RVMs. This is not a feature of the Dutch plan. For example, there are 10 return opportunities per 10,000 people in Lithuania, and as high as 28 per 10,000 people in Norway. Redemption opportunities in the Netherlands are slightly lower than RVM provision, at 1.9 per 10,000 people in the Dutch plan for cans. Convenience is key to public participation in a DRS and against this measure of convenience the Dutch proposal falls short. All schemes that exceed 90% internationally have both higher levels of RVM provision than the Netherlands, and consideration of manual return opportunities widens this gap even further. **We consider the very low number of return and redemption points per person in the Netherlands a serious performance risk, especially when combined with the analysis of locational convenience below.**

Table 5-1 Reverse Vending Machine (RVM) provision in European countries, including the Afvalfonds proposal for cans

Country	Population Density (person/km2)	Total Population	RVMs	RVM density per 10,000 individuals
Denmark	135	5.8 million	3,000	5.2
Germany	232	82.9 million	44,000	5.3
Estonia	29	1.3 million	700	5.4

³³ The Afvalfonds plan aims for 3,300 return locations, serviced by 4,300 RVMs.

³⁴ If cans and PET are integrated over time at these new locations, this infrastructure would however be dealing with many more containers; the expansion to cans will add approximately 2.2 billion containers to the scope of DRS provision overall in the Netherlands.

Finland	16	5.5 million	4,000	7.3
Lithuania	43	2.8 million	1,000	3.6
Norway	16	5.3 million	3,700	7.0
Sweden	22	10.0 million	5,100	5.1
Netherlands (Proposal for cans)	423	17.4 million	4,300	2.5

Source: Eumonia internal analysis supplemented by data from Reloop Global Deposits Book 2020, and Recycling Netwerk Benelux.

The level of provision suggested in the proposal for cans (for around 3,300 return points) can be compared to a 2019 study commissioned by the Dutch government to inform design of the DRS for small plastic bottles. That study³⁵, recommended a much higher number of obligated return locations (around 12,000) would be needed to achieve DRS capture rates of 90%. Additionally relevant to the discussion in section 5.2.2, these were also all assumed to be return-to-retail locations.

12,000 return locations would be 6.9 per 10,000 people. The study assessment also suggested there would be additional provision on an “opt in” basis from smaller retailers. While it would depend on take up, such an additional element of provision would potentially bring the total number of redemption opportunities offered into the same ranges seen in other European DRS’s once manual return locations are considered. **This observation confirms our assessment that the number of return locations in the proposal is a risk, not simply in relation to international practice, but also in relation to previous assessments in the Dutch context³⁶.** We do however note that the actual DRS for small PET does not provide this many formal return points in practice.

The “voluntary” collection points that Afvalfonds intends to supplement formal RVM provision with, should not be counted as part of the DRS when assessing scheme convenience overall. We understand from interviewees that similar voluntary provision of collection points exists for small plastic bottles in the Netherlands, so this element of the proposal is not unprecedented. Subsequently verified returns via these routes will contribute to the return rate and payments will be made – these containers will therefore not represent unredeemed deposits, and may make a small contribution to the DRS performance.

It is however important to realise that these collection points do not create an opportunity to reclaim a deposit for consumers, and so the individual economic incentive that is key to a

³⁵ EY & Parthenon, 19/05/2019, *Eindrapportage Uitbreiden statiegeld: Systeeminrichting*, p22, <https://docplayer.nl/158466789-Uitbreiden-statiegeld.html>, accessed 23/02/2022

³⁶ There are more cans than plastic bottles in the Dutch market, but we assume the key determinant on the number of return locations needed is geographical coverage, not capacity to receive containers.

deposit return DRS will be lacking at these points. Charitable provision of return opportunities, or the option to donate to charity at return points, is seen in some DRS's internationally, but is never a major factor in delivering national environmental policy outcomes. It does not seem appropriate to count these voluntary points as part of the DRS for individuals when analysing "return points" as a proxy for convenience and we have not done so³⁷. **In our assessment the provision of these additional voluntary collection points may make a small positive impact on performance (and with a challenging 90% target even marginal gains will be welcome). However, this observation does not affect our analysis above, that return point provision overall is far lower than in other high-performing schemes internationally.**

While we do not consider these voluntary collection route key to performance, our assessment is that cans cannot simply be added to the existing network of voluntary collection points for plastic bottles, which may add additional complexity to this element of the proposal. If the can and plastic bottle DRS logistics and return verification processes are separate systems, then containers would have to be collected separately or subsequently separated to be sent into the two different systems. **Split provision at voluntary locations will have similar impacts for consumers to the wider issues around split provision raised in section 5.1.1**

5.2.2 The location of return points in the proposal

As well as having fewer deposit redemption opportunities for cans than the highest performing DRS's internationally, consumers in the Netherlands will also face return locations for cans that are potentially less integrated in their existing routines and behaviour.

Can provision in the proposal is described as "near" store, and our analysis is that the approach outlined falls short of the return-to-retail model of at store provision seen in the highest performing schemes internationally. This model is also highly likely to fall short of consumer expectations in the Netherlands. Dutch consumer organisation Consumentenbond shared with us a public opinion survey they conducted in late 2021, showing 89% of respondents thought it important or very important that cans and plastic bottle return could be done in the same locations as purchase³⁸. In the context of the current report, the fact return locations for cans and plastic bottles will be divergent has already been discussed (section 5.1). **However, it is worth noting that we consider the combination of split provision, and the fact cans will not be as convenient as existing small bottle return points, as compounding the performance risks associated with both barriers to participation.**

Central to our judgement in this section is our assessment that "near" store provision of return points is not equivalent to "at" store provision seen in return-to-retail models internationally, and in current Dutch DRS provision. In the proposal for cans, return points may be as much as 500m away, which in the worst case would require an additional round trip of 12 minutes

³⁷ If counted, then the number of return opportunities per 10,000 people is still much lower than the European comparisons in chapter 3.0 for total return points, and all those points overseas offer a deposit refund, a key element of the behavioural rationale for a DRS.

³⁸ Email correspondence, 17/02/2022. This was a panel poll of 11,616 people, and any response bias in respondents is likely to be driven by higher than average interest in consumer affairs, rather than the environment. 52% stated alignment with purchase locations was very important and 37% that it was important. 6% were neutral.

(walking at 5km/h³⁹). An estimated 20% of supermarkets will be at least an additional 4-minute round trip from a return location according to the modelling in the current plan, and 40% will be at least an additional 2-minute round trip. These distances can be put in context by comparing them to standard supermarket trips in the Netherlands. Census data⁴⁰ shows that across the twelve Dutch provinces the average distance to a supermarket varies between 0.7km and 1.4km, with the national average being 0.9km (a round trip of 1.8km, or 22 minutes for a round trip on foot) – and many Dutch citizens will live closer. Against what are already short journeys, an extra hundred metres is noticeable. These theoretical journey distances may be greater at DRS launch, when provision is not complete.

“Near” store provision of the type outlined in the Afvalfonds proposal is a rare exception for individual return points in other European DRS’s, where return-to-retail is the dominant design principle for DRS’s as a whole⁴¹. Denmark and Sweden are cited as “combined” models in the proposal, but retail premises (both with RVMs and via manual return) are overwhelmingly dominant when considering return point location in both countries. Lithuania has a significant degree of “kiosk” provision, as stated in the proposal, but this is more substantial (closed off from the weather) and directly adjacent to stores (with store staff nearby and considered responsible for oversight) than the proposal for cans in the Netherlands⁴². The Afvalfonds proposal appears to base expected performance assumptions on comparison to the performance of other DRS in Europe⁴³, but our assessment is that both the number and location of return points in the current proposal is not comparable to the DRS’s listed⁴⁴.

Overall, our assessment is that this scheme is not a return-to-retail model, and expected performance should therefore not be based on that of return-to-retail models. Chapter 3.0 highlighted that return-to-retail is associated with the highest performing systems internationally. It is also the expectation of Dutch consumers, both in surveys, and given their lived experience of DRS provision to date.

In chapter 4.0 we also highlighted that scheme design should consider accessibility for all demographic groups. This is not simply about fairness, but also about the quest for a 90% return rate – to achieve this, the scheme needs the widest spread of participation possible. Additional journeys are an inconvenience barrier for all, but pose specific issues for elderly people, people with mobility difficulties, and those with young children. The consequences of this may not simply be lower return rates. Socially, the least mobile would also be the people facing the highest barriers to reclaiming their deposits. The specific risk this impacts overall perceptions of the scheme and demotivates participation more generally was discussed in

³⁹ Eunomia’s assumed walking speed; some demographic groups might be slower, especially in a busy urban environment

⁴⁰ Statline, *Regionale kerncijfers Nederland*, 2020 data, <https://opendata.cbs.nl/#/CBS/nl/dataset/70072ned/table>, accessed 15/02/2022

⁴¹ Eunomia have worked with experts familiar with these DRSDRS’s on a number of projects over time, and this view is based on that knowledge. All three of the DRSDRS’s mentioned in this paragraph are classed as return-to-retail by Reloop in their *Global Deposit Book 2020* also.

⁴² Other examples in the Afvalfonds proposal are not national DRS’s

⁴³ Afvalfonds verpakkingen, 08/12/2021, *Plan van aanpak toekomstbestendig statiegeldsysteem voor metalen drankverpakkingen*, p11 <https://afvalfondsverpakkingen.nl/a/i/Overige/Plan-van-Aanpak-toekomstbestendig-statiegeldsysteem-voor-metalen-drankverpakkingen.pdf>, accessed 18/02/2022

⁴⁴ Hungary and Russia are also given as examples in the proposal, but these are not national DRS DRSDRS’s. We do not have information on their performance directly, but author experience with localised and retailer specific DRS pilots in the UK suggests that performance in such atypical and bounded cases is a poor indicator of likely performance in national DRSDRS’s

section 4.2. Environmentally too, the risk additional journeys are made car was mentioned by some expert interviewees.

5.2.3 Other potential barriers to participation

Additionally, several interviewees, from both an industry and municipal perspective, highlighted that **the most theoretically desirable return locations in the plan may be particularly hard to get in practice**. It is in crowded urban areas where an RVM location to serve a cluster of stores, or even adjacent to a store, will be hardest to source. So, achieving the theoretical coverage of a maximum journey of 500m to a return point may not be possible in all cases⁴⁵. This interviewee assessment was based simply on space considerations. Planning issues may pose additional hurdles and are discussed in chapter 6.0 and 7.0. **Greater distances will raise barriers to participation, and thus impact performance**. This is particularly likely at launch, given the expectations of 80% coverage, temporary provision in some locations, and the likelihood that return points are harder to place in busy urban areas.

Unstaffed return locations may also be less welcoming for consumers than those in high footfall retail locations. Although longer hours are presented as a benefit in the current Dutch plan for cans, opinion surveys suggest at-store recycling is the consumer expectation and retail hours will already be tailored to customer demand and existing behaviour. Expert interviews suggested downtime may be much higher at unstaffed RVMs, as reliability will be poorer (from both misuse, and exposure to the elements), and problems will take much longer to fix than those arising in-store (as all issues, no matter how minor, will require a dedicated maintenance visit).

The risk that consumers seek to force ineligible items into the machines, or dump items if the machine is not working, were both considered far higher at an unstaffed location, both due to the lack of supervision and the greater likelihood the RVM would in fact be suffering downtime. Minor interventions with RVMs in retail stores may happen several times a day and are fixed in real time by staff on site, or, if needed, perhaps with support via a service call with the supplier. In contrast, the average number of service visits to an in-store RVM averages just 2.5 visits per year according to one of our interviewees. **At an off-site location, every issue will need a dedicated visit**.

Greater downtime will significantly undermine user-friendliness, as consumers are left unable to return containers, perhaps after making a dedicated trip. Poor experiences at return points are likely to demotivate citizens and will not help form return habits. For these reasons, unstaffed return points are a rarity in national DRS's elsewhere.

Our assessment is that unstaffed locations will be less welcoming than return at retail locations for some consumers, independently of the geographical location. More significantly, we also expect more technical downtime at these locations, both inconveniencing consumers

⁴⁵ Two interviewees expressed doubts about the example map shared in the plan, with concerns about how accurately it captured store provision and kept all retail premises within 500m of a return point.

directly, and potentially creating a perception of unreliability that depresses future participation.

5.3 The overall citizen experience

In this section we restate the four factors we believe shape the consumer experience of, and thus participation in, a DRS. No single factor determines that a system will or will not achieve 90%, it is how they combine to enable and encourage return that matters.

5.3.1 Deposit level

The deposit level is not a feature of the Afvalfonds proposal, which assumes the minimum deposit specified in legislation (€0.15) will be used. However, deposit level is a key feature of our analysis of factors contributing to high performance elsewhere, and its relative contribution to performance is a factor in assessing the likelihood the proposal for cans will reach 90%.

In international terms, the deposit level in the Netherlands will be neither very high nor very low (see chapter 3.0). Some schemes with deposits at this level achieve 90%, and others do not. Therefore the deposit level should be sufficient to achieve 90%, in successful combination with other key design factors that influence overall consumer participation.

Chapters 3.0 and 4.0 also emphasised that **while a high deposit can provide a greater economic incentive to participate, this single factor will not automatically overcome other barriers to participation.** Other design factors are critical to enabling participation, and these are the focus of the risks we have identified in this chapter.

One interviewee speculated that a higher deposit level would be needed to achieve a 90% return rate with the current plan in light of the consumer barriers. However, in practice, our assessment is that changing the deposit level in isolation would not guarantee return rates of 90%, and that the deposit level is not the major risk to this plan.

Additionally, as unredeemed deposits are one of the ways in which DRS's are funded (see chapter 4.0), it is important not to subsidise poor performance. Raising the deposit in a system that is not user-friendly will primarily raise costs for consumers and income for the scheme, as the value of unredeemed deposits increase. In this respect, high performance may be necessary to make high deposits seem fair to the public; high deposits cannot simply be seen as a way to achieve high performance. Even with the current deposit level, a DRS performing at 89% rather than 90% would see consumers collectively forgoing more than €3 million each year⁴⁶.

Our assessment is that the Dutch deposit is likely to be sufficient to reach 90% within an overall scheme design that is user-friendly. The performance risks we identify in this chapter relate to user-friendliness, not economic motivation.

⁴⁶ This calculation assumes 2.2 billion containers in scope for the cans DRS in the Netherlands, and a deposit of €0.15

5.3.1 Convenient return opportunities

Against two objective comparators of convenience the proposal falls short of the levels of provision seen internationally:

- **The proposal provides fewer return opportunities per capita compared to the highest performing schemes internationally.** This is true for RVM provision alone, but especially if comparison factors in the additional provision of manual return opportunities common in high-performing schemes elsewhere. We do not believe the provision of voluntary collection points substitutes for this like of formal provision.
- **The proposal does not match the return-to-retail approach used in the highest performing schemes internationally.** Return-to-retail matches existing shopping patterns, and, in the Netherlands, existing DRS returns for other containers. However, in this proposal additional journeys will be needed at a significant number of return points. The Netherlands already has return-to-retail DRS, and it is a consumer expectation and preference, so it seems likely consumers will also conclude that the proposal does not match return-to-retail provision once locations are rolled out.

Qualitatively there are also grounds for concern around convenience:

- **The desired spread of coverage may be challenging to achieve in practice,** with ideal placement of return points in busy areas likely to be challenging
- **Unstaffed RVMs are likely to be less reliable, impacting consumer experience, and the likelihood of future participation.** These sites may also be seen as less welcoming than a retail environment by some users, negating any benefit from longer hours.
- Split scheme provision is likely to be highly inconvenient, but is covered below.

Consumer convenience is central to the public's capacity, opportunity, and motivation to participate. To reach 90% participation needs to be very high, as only a small number of containers (and therefore participants) can be "lost". Combined, the low number of return opportunities and the fact these will be in less convenient locations than international comparators and Dutch experience to date, pose a significant risk, and this risk is exacerbated by the split provision discussed next.

5.3.2 Simple and consistent scheme, and scheme communications

The current proposal for a cans DRS does not combine with existing DRS provision for other containers to offer a single system that is simple and consistent for the public.

This lack of a single "national" DRS across all eligible single use containers, and especially cans and plastic bottles, is not a choice made in high-performing schemes elsewhere. In the Netherlands, it is also worth noting that aligning plastic bottles and cans away from retail would not fix the issue of split provision, as DRS provision for reusable beer bottles would remain in store. A shift away from retail would also mean moving plastic bottles away from the location that consumers are used to, and which performs best as a return location internationally.

Split provision will also make operational aspects of the cans scheme more challenging. This inefficiency is not directly impactful for consumers, though it may be if it translates into a worse than expected service – this seems most likely around return point servicing and reliability,

which we expect to be much harder to deliver away from store. It may also impact consumers via challenges on launch, discussed in chapter 7.0

Communicating the scheme will be challenging as a result of both split provision and the decision not to locate return points consistently at retail locations.

- **Split provision means that there is no single message for all DRS containers.** This may impact both the performance of cans, and existing DRS provision, especially if confusion translates into actual user experiences (e.g. people taking containers to locations where they are not accepted).
- **Consumers will be asked to undertake trips to two locations rather than one to return DRS containers.** Internationally, a DRS is a single scheme for all containers. Dutch consumers are highly likely to struggle to understand why two “schemes” exist in the Netherlands, rather than a single behavioural experience
- **The fact return is not “at” retail locations will also constrain universal messaging around the cans DRS.** Communications around local provision will have to be hyper-localised.
- **The DRS for cans cannot build on existing consumer DRS behaviour,** or benefit from the visual and behavioural prompts of seeing existing provision expand while on existing shopping or container return trips. Everything will have to be delivered from scratch.
- **The transition period in 2023 and 2024 will also complicate communication** as people’s local experience will shift over time, rather than be embedding habits from day one.

5.3.3 Overview

To reach 90% return, the Dutch DRS for cans will need to match the performance of the best schemes in the world. It must maximise participation by the public, and capture of containers. **Each barrier to consumer participation that is introduced will have a detrimental effect on performance; each barrier that is removed will present a performance gain. The impact of performance losses are cumulative, and very few containers can be “lost” before a 90% return becomes impossible.**

In our assessment the current proposal does not match the design factors that combine to give a 90% return rate in the highest performing schemes elsewhere. Both the number and location of return points will be less convenient, and in combination especially this poses a significant performance risk. This risk is compounded by the nature of split provision for cans and plastic bottles, and the resulting additional inconvenience of separate return locations for different containers. Taken together these factors will also make communications difficult and may also damage consumer willingness to participate.

Most interviewees did not wish to guess at the likely performance of the proposed deposit return DRS for cans in the Netherlands. **All interviewees genuinely wanted it to do well, but had concerns about the unproven nature of key elements of the proposal relative to international experience, the fragmented nature of deposit return provision in the Netherlands overall in light of this proposal, and the likely user experience for Dutch citizens as a result.** One interviewee suggested that it was certain to perform worse than the DRS for small plastic bottles, as the cans plan is simply less user-friendly, an assessment supported by our analysis. The most pessimistic estimate was that it might struggle to capture 50% of cans, an assessment advanced by two interviewees.

The risks we identify around inconsistent DRS provision in the Netherlands, and the fact provision will also be more limited and less conveniently located than international DRS's are cumulative. Some might be expected to threaten the achievability of the 90% target alone, but in combination we think they could rapidly add up to result in too many containers being "lost" to the scheme to reach 90%.

6.0 Performance risks specific to the Netherlands

In the course of our expert interviews, some additional risks specific to the Afvalfonds proposal were raised, that did not relate to the international framework we set out in chapters 2.0, 3.0, and 4.0, and assessed in chapter 5.0. **The proposed location of return points outdoors is a highly unusual feature of the Afvalfonds proposal for cans, and it poses some very specific challenges around placing and operating the points.** In this section we highlight what these are and consider if they will additionally impact performance.

6.1.1 Local environmental quality at return locations

The Afvalfonds proposal suggests that near-store return points may have a greater anti-litter impact than in-store return due to their more “on street” nature and longer operating hours. This additional anti-litter impact seems unlikely based on behaviour change analysis. People who drop litter frequently do so despite bin provision that is far more extensive than any deposit return point infrastructure can be. A key feature in changing behaviour here will be the economic incentive provided by the deposit. If this prevents an item being dropped, or encourages it to be picked up, then considerations around return convenience become the same as for any other DRS user, and the geographical closeness, and behavioural convenience of return, will be key, and will align with previous analysis around return more generally in chapter 4.0. **Therefore, we do not believe that “near” store provision will have any beneficial impact on capture of items that would otherwise have been littered, compared to a return-to-retail model.**

Interviewees in the Netherlands, especially those from or sharing the perspective of municipalities, raised specific concerns about *additional* litter problems arising around unstaffed and outdoor return points. It was noted that current outdoor recycling locations for paper, glass, or textiles may not be a good parallel for deposit bearing items, but existing community collection points for these items do create problems of “left” items (which then become litter), if collection points are full, or people bring ineligible items.

It was also suggested the extent this was a problem might vary from RVM to RVM depending on very local factors, but it was assumed that in all cases bags used to carry containers, and ineligible items, would invariably arise and would be highly unlikely to be taken away again by many consumers; in the best case this would require provision and servicing of additional waste management containers for these items at RVMs. If there is confusion about item eligibility and varied return locations, then the risk of the wrong items being brought – and then left – will be increased.

We therefore identify a risk that the Afvalfonds proposal will have a smaller anti-litter impact than is expected, if return locations become a source of alternate litter items. This would not directly impact a 90% return rate for the targeted items, but could undermine perceptions of the scheme, and willingness to participate, or to host return points in locations needed to

achieve user-friendly coverage, and thus have indirect impacts. We therefore believe that **avoiding negative litter effects at return points is important to achieving the scheme's objectives.**

6.1.2 Infrastructure provision for the long-term

Circular Hubs

An additional reason for proposing this outdoor approach to return points in the Afvalfonds proposal is stated as growth potential, with scope for these locations to receive more packaging or products in future. Locations would then become "Circular Hubs" assisting responsible management of a wide range of items far beyond the initial scope.

Every stakeholder we spoke to was supportive of charging a deposit on drinks cans. All of them were also supportive of the need for a coherent recycling vision in the Netherlands and had given the concept of Circular Hubs serious consideration, but linking the current plan for can return points to the idea of Circular Hubs caused some concerns. **Interviewees frequently felt the "Circular Hubs" idea was insufficiently developed, and poses risks as currently described.**

If RVMs were to become a seed activity for further expansion of circular hubs, then future proofing their placement becomes even more critical, both for residents and future access and management implications. However, this long view is not expected to be a key feature of specific location proposals when these are shared with municipalities in the context of the immediate DRS requirements. Indeed, immediate requirements in the proposal – that RVMs are located within 500m of every supermarket – may be incompatible with a long-term desire for larger, more complex takeback locations for multiple materials.

Interviewees also expressed concerns that if people's initial experience of the DRS for cans is not positive, and is also associated with the idea of "circular hubs", the whole concept may be undermined.

Beyond that, opinions varied a little more by stakeholder. Municipalities focused on operational factors including the expected size, cost, and funding model for hubs over the long term, and were keen that extended producer responsibility principles would apply effectively. Industry interviewees were perhaps more optimistic about how the concept could be operationalised long term. **However, all interviewees shared concerns about combining the idea of the need for long term circular hubs with the short-term desire for a DRS for cans, especially with limited time available.**

These concerns would probably only have an indirect impact on DRS performance for cans in isolation, but could have an indirect impact if resident concerns about overall waste management in their neighbourhood manifest as concerns around the cans DRS specifically. **In the meantime, the placement of return locations for cans matters, for convenience, for performance, and to municipalities that will be impacted by placements.** A preference for return-to-retail was therefore offered by interviewees, on the grounds of user-friendliness, operational efficiency, and concerns about litter impacts from provision, all discussed previously.

Fitting “near” store return to real street locations

Municipalities had additional concerns about the “near” option, centred around its feasibility.

In busy urban areas space is at a premium. Placing new street infrastructure - from electric charging points, to bike parking, to waste facilities – is always extremely challenging. There are specific restrictions on where waste management facilities can be placed in relation to residential buildings, and operational factors like vehicle access (in both space and time terms) and electricity supply, also need to be accounted for.

Municipal interviewees do not yet know how or when proposals for new return points will be presented to them, but stressed that each individual location would need a set of hyper-local determinations to be made. One municipality interviewed suggested issues might be significantly easier in less crowded areas (where only one RVM might be needed for one store, and retail sites might have adjacent space to site it); they stressed that the workability of the proposal should be considered against hard cases, not just easy ones.

Overall, getting locations that work at hyper-local level will be key to scheme performance.

The Afvalfonds proposal assumes planning permission can be fast-tracked by means of the ‘kruimelregeling’, which is not the view of municipalities. However, this is not just a question about the correct legal pathway and the need for residents to be consulted. It is also a wider concern that **municipalities feel they need to be able to input to decisions to ensure infrastructure is not inappropriately placed for wider management of public space and waste and recycling services**⁴⁷. This factor is discussed in chapter 6.0 in terms of relevance to the launch timelines for DRS for cans in the Netherlands.

Municipal interviewees shared the concerns of industry interviewees about whether return points could be placed for the launch deadline (see chapter 7.0). Of greater importance to municipalities however were the long-term implications for local neighbourhoods, in terms of managing public space overall, and delivering other waste and recycling services. Municipal interviewees believe a more detailed planning process is needed to ensure the right decisions are made about the placement and provision of infrastructure in public spaces for the long term.

Municipal interviewees were also concerned that municipalities would have elements of return point management left to them, or be expected to take on such responsibility by residents or RVM users in the event of problems (e.g. litter accumulating at unstaffed RVMs, or RVMs that were not working). One municipal interviewee (from a large city) did not know how many return locations would be requested in their city, but based on the national numbers for provision was concerned both that there would not be sufficient space, and that more locations than proposed would probably be needed to achieve good coverage in any case.

Deploying new waste infrastructure in publicly accessible locations will not just be a question of planning and technical challenges, with interviewees identifying that some municipalities may

⁴⁷ As an example, waste collection services are time-restricted in many city centres; one interviewee was concerned to ensure that this would also apply to any DRS logistics – currently servicing waste public waste infrastructure is a municipal responsibility, albeit one that may be contracted out.

have wider policy preferences about best use of public space and industry and retailer responsibility for service provision.

Given the proposal for “near” store provision, municipalities are clearly a key stakeholder in both decisions about DRS provision in, or affecting, public spaces. This is true for both siting RVMs in the short term, and for any wider strategic discussions about the costs, benefits, and responsibilities of transitioning to more holistic and circular management of waste and recycling services. It is essential that they are included.

Our assessment is that if return point locations cannot be placed as desired by the Afvalfonds proposal, that will have additional implications for convenience, as discussed in chapter 4.0. Additionally, if locations chosen cause problems for residents, this may impact perceptions, and willingness to participate in the DRS scheme too. Minimising these risks will require arriving at a solution that works for municipalities, as well as for the DRS scheme.

7.0 How challenging is the DRS launch date in the Netherlands?

The lack of detail makes it hard to assess the timeline for launch in the Netherlands, and also made it hard for some of our interviewees to quantify their expectations. However, timing concerns were profound, both at national level (e.g. equipment, systems, and logistics) and at local level (finding locations and siting machines).

The plan does not anticipate full provision of the final DRS on launch day, set in legislation as no later than 31st December 2022. The plan promises 1,300 RVMs in new locations, and a further 1,500 return opportunities provided by supermarkets to give 80% coverage by that date. As a “fallback” if bespoke provision falls short of this, greater retailer provision in the short term is suggested but not detailed in the proposal. A continued shift is then expected in 2023 and 2024 as additional separate DRS return points for cans are set up and supermarket provision is scaled back. Interviewees expressed differing understandings of how the current plastic bottle DRS provision would or would not be integrated during that period.

The assessment below focuses on an assumed launch date of 31st December 2022. Industry interviewees identified that producers have been told they can place cans eligible for the DRS onto the market from October 2022 onwards. This does not align with the proposal timeline, which does not show provision in place at this stage. In practice, this would mean that consumers would pay the deposit fee when buying a can, without having any possibility to get it back.

For the DRS to be effectively operational in October would almost certainly not be possible; even **the feasibility of the later date in December is heavily dependent on progress to date, which is not publicly known.** The most recent DRS launches in Europe were Estonia (which delivered implementation stages in under 12 months) and Lithuania (which took longer than 12 months to operationalise plans). The Dutch proposal contains a similar number of machines (to the end of 2022 only) to the Lithuanian national DRS on launch. However both Lithuania and Estonia were installing RVMs at retail locations and did not face the challenges of locating suitable sites elsewhere. It is worth noting that Estonia took 18 months from legal mandate to launch, while Lithuania took 23 months.

We also note that the complexity of operationalising the plan for cans is much greater than the complexity of launching the small plastic bottles DRS in the Netherlands in 2021. The latter took advantage of existing locations, infrastructure, and logistics for large plastic bottles, already provided by retailers. Purchase and installation of new RVMs was decentralised, and return-to-retail simplifies responsibility for go live, by delegating major elements of provision to retail sites who are in control of their own premises (and might process containers manually in the event they are late to achieve readiness). In contrast the plan for cans requires setting up

entirely new facilities in harder to confirm locations, and as far as we know does not take advantage of existing DRS infrastructure or systems.

In the rest of this chapter we give a brief overview of some of the critical paths to launch that have been seen in DRS's elsewhere, which can help benchmark the Dutch proposal. We then follow up with a discussion of factors specific to the Dutch context that make achievement more or less likely. Our insight into international timelines draws heavily on our experience talking to system operators and those directly involved in international cases, rather than published reports.

Table 7-1 Critical paths and required timelines for DRS launch based on international experience

Potential critical path	
Appointment of a system operator	<ul style="list-style-type: none"> • A typical timeline to establish a system operator is 4 months. However, this stage usually precedes both detailed DRS design for operations and finance, and all the other operational stages below. • Afvalfonds is currently delivering tasks that would normally be done by a system operator, and may become the system operator, so this may not be a critical path.
RVM procurement	<ul style="list-style-type: none"> • A typical timeline is 12 months, and we recommend having the contract for the equipment in place 12 months from launch • Some DRS's have delivered slightly faster (e.g. Estonia took around 9 months)
RVM installation	<ul style="list-style-type: none"> • This needs to be aligned with the delivery dates and flow of machines in the specific national contract • Internationally, return-to-retail models have site selection pre-defined on a large scale, so it is a solely localised challenge for stores to find a suitable location; whereas return-to-depot models are typically trying to place far fewer return points than the Netherlands. Finding suitable sites is therefore a unique challenge in the Dutch context. • The installation rate implied by the Dutch plan (~1,000 machines between September and December) is very challenging, but not impossible in the right circumstances (e.g. Lithuania managed this, but via a concerted logistical effort directly with large retailers on their sites) • In return-to-retail DRS's, the most common fallback is that returns may be manual at some locations on day one. It is not clear what the actual mechanism for return will be in the fallback proposal for cans in the Netherlands

Transport and logistics	<ul style="list-style-type: none"> • International experience suggests 9 months may be needed for setting this up. • However, it may be hard to optimise logistics arrangements without detailed planning on likely container flows and return point locations, and this could cause specific problems given the lack of detail in the Dutch plans currently.
Counting centre, sorting, and baling	<ul style="list-style-type: none"> • International experience suggests 12 months may be necessary to set these up. The extent of infrastructure required will depend on other logistic and RVM design decisions (e.g. RVMs with compaction would reduce the need for counting centres⁴⁸) • We do not know the size of this infrastructure gap in the Netherlands. Existing provision for PET (e.g. counting centres) is integrated in retail supply chains, so provision for cans collected in alternative locations needs to be considered – there will not just be more containers, they will also be arising in a different logistics chain
IT systems	<ul style="list-style-type: none"> • International experience suggests this can take 6 months • The Netherlands already has working IT systems for the plastic DRS; if these can be adopted, this might be significantly quicker
Stock changes	<ul style="list-style-type: none"> • One interviewee suggested this could take 3 months in the Netherlands.
Communications	<ul style="list-style-type: none"> • Internationally, planning and delivering launch communications would start at least 5 months before launch

Source: Eunomia analysis based on discussions over time with international practitioners

Some industry interviewees expressed serious concerns about the timelines for RVM procurement. International supply chain challenges meaning supply may be slower than normal in 2022, and there may be more exacting technical requirements needed for machines in an outdoor setting. We do not know the detail of contractual arrangements already in place, but based on international experience, the Netherlands now appears very close to the limit for a procurement timeline to deliver machines for installation before the end of December. The need for shelters for outdoor RVMs will add to installation complexity but is probably less of an issue than considerations such as power connection in public spaces, and it is planning permission rather than shelter installation that is more likely to impact timelines.

Installation for RVMs poses unique challenges in the Netherlands. Discussion with interviewees focused on several factors. The first is planning permission. Municipal interviewees believe that both legally and operationally these return locations should go through a formal planning process; the Afvalfonds proposal suggests this is not necessary if the facilities are classed as “public utilities” and so planning can be fast-tracked. In practice, if public space is needed, or municipalities need to facilitate installation of the return points in any way, then their cooperation will still be essential, and this will take time.

⁴⁸ RVMs with compaction can validate the return of the can and crush it so that it cannot be “returned” multiple times, thus eliminating the need for validation at a counting centre. However, even if all RVMs have compaction, the inclusion of voluntary collection points in the proposal means some provision for counting will be needed

Planning considerations (space, resident views, legal restrictions on siting waste infrastructure, and long term fit to a neighbourhood when a return point is operational) were all discussed in chapter 6.0. Resolving all these well in the time available will be challenging, regardless of the precise legal route required, and several municipal interviewees did not think this could be achieved. Municipalities do not yet know how many return locations will fall within their areas, how many will be on public land, or what they may need to do to facilitate either planning permission or installation. Municipalities interviewed stressed that decisions on location are hyper-local, and it will not be appropriate to mass process them from a municipal point of view.

Siting and installing RVMs away from stores also poses logistical and technical challenges, given an RVM's need for power connections. Lithuania achieved a very fast national installation, also for around 1,000 machines, but this was all store-adjacent and required several months of intensive round-the-clock work. In conjunction with concerns about greater need for servicing and reliability, there may also be challenges with maintaining the proposed rate of installation in early 2023, while resolving teething problems across a young network.

It may be expected that **some sites can be delivered by the end of December, even if not the full number stated in the plan, but these may not provide the coverage desired as harder sites (e.g. in busy city centres) may be the slowest to place.** Both industry and municipal interviewees expressed concerns that the fallback proposal in the Netherlands is not well articulated. Having return points where consumers expect them at launch isn't just important because there are containers people want to return that day. It is also important to forming consumers' initial views of the DRS, and the habits they will start to form. Launch poses both a behaviour change opportunity and risk, depending how well it is leveraged, communicated, and experienced as a behaviour change opportunity. So, this may pose a performance issue, as well as being a timing concern.

Transport and logistics arrangements can take 9 months to set up, but elements of this are dependent on understanding where return points, container flows, and logistic hubs will be. We do not know how far planning for logistics has gone. Expert interviews highlighted that the current plastic bottle DRS uses reverse logistics (sending containers back along the supermarket supply chain), and many retailers have integrated elements like container counting into their distribution hubs as a result. This is efficient, but incompatible with the proposed DRS for cans, which will therefore need a new approach. Understanding municipal constraints may be important here too, as access to some RVMs (again, especially in busy city centres) may not be desirable during peak hours. Without greater detail on the extent of planning to date, neither we nor any of our interviewees could judge with confidence if logistics will be a constraint on delivery for the December deadline.

Uniquely for this proposed operating model of outdoor and unstaffed locations, with both a higher maintenance requirement and no on-site support, there may also be a need to provide a much higher servicing requirement than for other DRS's internationally. How this service will be provided is not described in the Afvalfonds proposal. We do not have comparable international experience to provide a benchmark.

If the IT systems are combined with existing DRS provision, then this critical path would be deliverable. However, our interviewees did not yet know if this would be the case. Separate IT systems could theoretically be delivered in the time available, but this task should not be

underestimated. Getting this right also relates to any labelling or stock-keeping changes needed from producers. One interviewee suggested stock changes would take three months in the Dutch case; this could happen concurrently with finalisation of IT systems if requirements are fully understood. These seemingly technical subjects do matter to consumers. Labelling can be important in communicating the DRS, but critically, they must be able to redeem their deposits from day one: every container in the system is worth €0.15 to someone from that point on.

Finally, internationally, DRS's have run extensive pre-launch communications. Again, there is time to deliver this in the Netherlands, but our interviewees did not know how advanced plans are. This may be more challenging in the Netherlands due to the complexity of the overall consumer experience around DRS.

Overall, our assessment is that on the evidence available it is not yet possible to say the launch date is unachievable, but it is incredibly challenging. The most recent European roll out of ~1000 RVMs (in Lithuania) took longer than 12 months, and the challenges of the Dutch proposal for cans are greater than for international return-to-retail roll outs, and to the launch of Dutch DRS for small plastic bottles. Both international comparison and expert interviews suggest a number of critical paths between now and launch that will be difficult to meet.

Expert interviewees also highlighted that greater detail on progress to date and expectations for future stages should be communicated urgently, especially to those stakeholders that will need to take actions themselves.

While some of these barriers seem technical, trouble behind the scenes will in many cases pass through to consumer-facing aspects of the DRS and impact return behaviour and, therefore, negatively impact the likelihood that the 90% separate collection will be achieved

8.0 Conclusions

Recycling Netwerk Benelux commissioned this study to consider two questions: the likelihood the proposal as currently set out can reach a 90% return rate, and the likelihood the proposal can be delivered by the launch deadline of 31st December.

Will the proposal achieve 90% return rates?

Achieving a 90% return rate means matching the performance of the best schemes in the world. Another way to look at this ambition is to realise that the scheme can only afford to “lose” one in every ten containers bought in the Netherlands. **Every design compromise that creates a barrier to participation or engagement for the public will cause performance to suffer to a greater or lesser extent.** To achieve 90% return, design compromises that impact consumer experience have to be minimised, because their cumulative effect can rapidly exceed the very low “loss rate” the target implies.

There is no single success factor for a DRS, and in chapter 2.0 we emphasised four core design components that determine consumer participation, an assessment supported by behavioural analysis in chapter 4.0. These four components were:

- A deposit level that provides a meaningful economic incentive for participation.
- A return point network that is both geographically close to, and behaviourally convenient for, people’s existing modes of living and working.
- A single system that is simple and consistent for the public.
- Clear and effective communications in support of the above.

The Dutch deposit level is neither very high nor very low. **DRS’s can achieve 90% return with deposits at the level set in the Netherlands, but not all do so, and therefore convenience will be even more key in the Dutch context.**

The number and location of the return points combine to create a significant risk around consumer convenience:

- **The proposal for cans provides fewer return opportunities per capita than high-performing schemes internationally.** This is true for RVM provision (and automated machines provide the majority of returns in most international return-to-retail models), and even more so in comparison to all return and redemption opportunities in international return-to-retail schemes (where RVMs are supplemented by manual return opportunities, which is not the case in the cans proposal in the Netherlands. The provision of voluntary collection points in the Dutch cans proposal (where deposits cannot be redeemed by consumers) will capture some containers, but does not substitute for provision of formal return points (automated or manual) because these locations do not provide the direct economic incentive of deposit redemption directly to consumers.
- **The proposal for cans also steps away from the highest performing and most user-friendly international model for return locations, which is return-to-retail.** This also diverges from existing Dutch DRS provision for plastic bottles and reusable beer bottles (both of which are returned to retail locations) and stated consumer preferences in the Netherlands.

The proposal also creates risks around scheme consistency and simplicity. **The proposal will create parallel and divergent return opportunities for single use cans and plastic bottles in the Netherlands, at least in the short term, significantly adding to consumer inconvenience, and potential confusion.** No system internationally takes this divergent approach for single use cans and plastic bottles. 2023 and 2024 will also see shifting provision at local level in the Netherlands as temporary return locations are introduced and then phased out. We anticipate this will make the system challenging to communicate and understand, especially at launch, both nationally, and locally in relation to specific return point locations. It will also make it harder to leverage communications across container types in the Netherlands, as there will be no single message.

Our assessment of the risks above was shared by expert interviewees in the Netherlands, who also highlighted risks around operational efficiency (in relation to parallel provision), and concerns about how the proposed model would integrate with wider street infrastructure and waste and recycling provision at the municipal level.

In our view the cumulative effect of these factors makes it highly likely that more than 10% of containers are “lost” from the system, thus preventing achievement of a 90% return rate.

Can the scheme for cans launch by the end of 2022?

Every DRS launch occurs in a different national context, and there is limited detail on how far preparations in the Netherlands have progressed to date against some of the activities that are essential to delivery. **However, international experience demonstrates a number of critical paths that need to be already underway, or initiated very shortly, if an end of December launch date is to be achieved.**

Clearly some return locations can be ready by December 31st, 2022, however a very high level of coverage (the proposal states 80% of proposed provision) needs to be ready, or substituted for, to deliver a reasonable consumer experience. “Hard” to install sites in busy locations are most likely to be missing, and consumers need to be able to universally return containers. **Launching without comprehensive national coverage would be deeply problematic both operationally and for citizens.**

Based on the available evidence we cannot definitively conclude whether the launch deadline is achievable or not, but the deadline is clearly very challenging given the operational model proposed:

- **The Afvalfonds proposal has features that pose some unique challenges in building an operational system, compared to scheme launches we are familiar with internationally.** Installing RVMs on new sites, that will not be owned or supervised by existing retail operations poses installation, logistics, and maintenance challenges that will be harder than return-to-retail rollouts internationally. Municipalities, who are key stakeholders in the rollout, do not know what will be asked of them, or for when, and expressed concerns about achievability.
- **Additionally, our assessment is that operationalising the proposal for cans is likely to be more complex than launching the small plastic bottle DRS in the Netherlands in 2021.** The latter took advantage of existing locations, infrastructure, and logistics for large plastic

bottles, already provided by retailers, and this both reduced the amount of new work needed, and delegated elements of operational responsibility to retailers.

- **Expert interviewees also raised concern about the planning requirements for the new return locations.** Municipal interviewees believe that both legally and practically these return locations should go through a planning process at local level. The way this will be done, the exact timeline, and the extent of support from municipalities are not yet specified and caused real concerns for our interviewees. **This is not just a timeline risk. Municipalities were additionally and specifically worried about how they will be able to ensure suitable and well-considered placements of any new infrastructure in their neighbourhoods.**

With the proposal only published in December 2021, the scheme will need to match or exceed the timelines we have identified for several critical tasks based on international experience, even if work started immediately. Progress to date on several critical tasks is not in the public domain, and there is also a lack of detail on how the “fallback” provision (for locations where permanent return points cannot be placed in time) will work in practice.

Overall therefore, we believe there are serious timing risks. We have identified several critical pathways to launch that need to be underway already or to start very soon, to inform further consideration of this question in the Netherlands as detail on progress becomes available.

9.0 Methodology Note

Eunomia Research and Consulting have worked on DRS's around the world for many years. We drew extensively on our knowledge of developments elsewhere for the purpose of international comparison and benchmarking.

There were three elements to the international analysis we undertook:

- An identification of good design principles based on the (limited) available literature, and our knowledge of DRS operations and performance
- An analysis of DRS design and performance, focused on testing and validating the design principles identified as most salient above
- A behaviour change analysis using COM-B, to ensure we caught the centrality of user experience in DRS design

We then compared the Afvalfonds proposal to these lessons from international experience. For this element of the report we also conducted a small number of targeted interviews (approximately 10 in total) with experts and practitioners in the Netherlands, including both “industry” perspectives (a category that groups individuals with expertise and understanding of DRS provision and the beverage market) and “municipal” perspectives (a category which groups individuals with expertise and understanding of waste management, planning, and municipal service provision). Interviews were split roughly equally between these two “perspectives”, though some had insight into several aspects. We used this expert input to both test the transferability of international experience to the Netherlands, and to highlight unique challenges or opportunities in the Dutch context.

Interviews were typically 30 to 60 minutes, and conducted by phone or video call, using questions tailored to the knowledge areas of each individual. We have supplemented detail from interviews with knowledge from our own networks in relation to the performance and technical parameters of DRS operations elsewhere. We also received email input from a Dutch legal expert and Consumentenbond. Recycling Netwerk Benelux provided insight into the policy context and history of DRS in the Netherlands. We were not able to secure an interview with Afvalfonds in the time available for this project, nor were they able to share greater detail on their proposal than that already in the public domain.

Our interviewees overwhelmingly opted for confidentiality, and we have not identified the respondents who did not, to maintain overall anonymity. These requests for confidentiality are respected throughout the report and limit our ability to give specific information and sources relating to the Dutch context in some cases. Unusually, we offered interviewees “double confidentiality” – i.e. we guaranteed both that they would not be identified in the report, and also that we would not give additional detail on individual responses to our client. Several interviewees opted for this additional layer of protection. Concerns over confidentiality have also necessitated a much shorter methodology section than usual, as we cannot provide detail of our interviewees, or greater detail on their specific professional perspectives.

Overall, there was very strong alignment between insight from the different elements of our approach.

