



Factsheet 10 | How can deposit refund systems be set up?

This factsheet outlines the basic principles of deposit refund systems as one potential element of an EPR scheme, and describes various forms of deposit refund systems.

A deposit refund system (DRS) is a specific form of collecting packaging as part of an EPR scheme. In a DRS, consumers pay a deposit when they buy certain packaged goods, for instance, beverage containers, and have to return the packaging after use in order to claim the deposit back. The deposit gives consumers a financial incentive to bring these items to take-back stations instead of simply disposing of them as waste.

A DRS is a separate type of EPR system that can usually be implemented alongside another EPR system for packaging or on its own. This is because the packaging covered by the DRS is not included in the general EPR system for packaging, meaning that the DRS operates on the basis of its own regulations, definitions, agreed responsibilities, infrastructure, monitoring and inspection mechanisms. Organising a DRS is therefore every bit as demanding as setting up an EPR system for packaging.

Key principles of deposit refund systems

In theory, deposit refund systems can be used for various types of packaging. However, in practice, **they are not suitable for the full range of packaging currently available, as they can only be applied to easily identifiable items, such as drinks bottles or rigid bottles used for household cleaning products.** The biggest limiting factor for a DRS is the space available to retailers, especially if attempting to collect more than one packaging fraction while complying with relevant hygiene standards.

In a DRS, consumers are incentivised to return items subject to a deposit to the retailer or another take-back station in order to claim back the deposit, rather than just disposing of the item as waste. Deposit refund systems are thus **systems based on consumer participation**, which can significantly reduce the amount of waste littering public spaces. Moreover, as this take-back system for used items is limited to specific goods, a DRS can collect **large quantities of high-quality, pre-separated material fractions**, allowing for high-quality recycling.

A number of decisions have to be made before a DR system can be established. It is particularly important to clarify the following points in advance:

- Which items made of which materials should be collected as part of the DRS, and how big should the individual items be?
- Where should the items covered by the scheme be collected?
- How should products to be covered by the DRS be labelled and identified?
- What organisational and administrative arrangements need to be made?
- How should the DRS be financed?
- How big should the deposit be to provide a sufficient incentive to consumers?

DRS with a direct interaction

In its simplest form, a DRS is built on a **direct relationship between the consumer and the retailer**. In this model, the consumer pays a fixed deposit when buying an item, which is added to the standard purchase price (e.g. €1 purchase price + €0.25 deposit = €1.25). In this kind of simple DRS, the take-back station is the shop where the consumer bought the item. When they return the empty packaging, the consumer shows the retailer the receipt for the item, and the retailer issues them with cash or a voucher, both equivalent to the value of the deposit.

If the item concerned is a single use bottle, the retailer then sells the returned packaging to recyclers, who pay him or her the scrap value of the bottle. Alternatively, if the bottle can be reused, it can be returned to the bottler to be re-filled. Small-scale deposit refund systems can be set up between individual retailers, by specific companies, or for specific events.

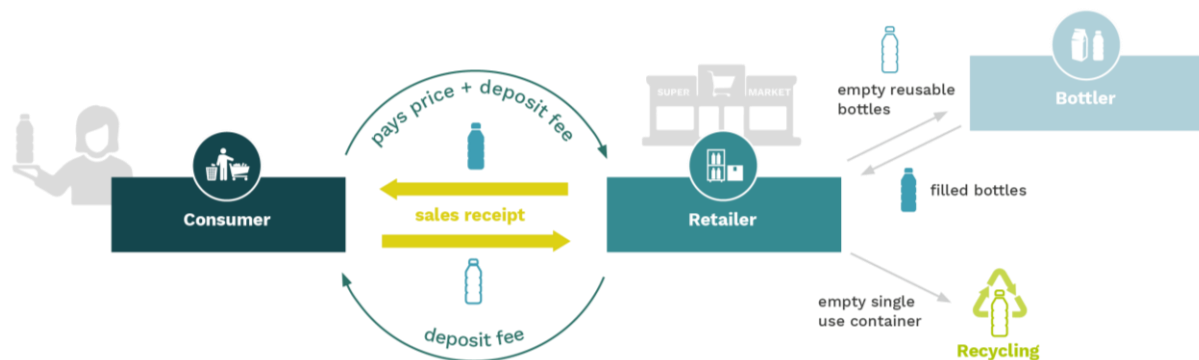


Figure 1: A direct DRS

When setting up a small-scale DRS, such as when covering a small geographical market or a specific event, the direct DRS model is often ideal because of the **minimal administration** and **organisational effort** needed to operate it. The first step towards setting up a DRS is to determine exactly which items and points of sale are to be covered; small-scale DRS are often able to accommodate reusable service packaging like plastic cups as well as bottles. If the items concerned can be labelled appropriately (e.g. with the event logo on the cup), or if there is no way anyone can bring their own bottles into the area covered by the scheme (for example if doing so is prohibited at a public event), there will be no need to issue a receipt before the consumer can reclaim the deposit.

Deposit refund systems organised by bottling companies

Another type of DRS can be organised by a bottling company and incorporate multiple retailers. For example, a bottling company could potentially stipulate that all shops selling its products must

participate in the DRS. Under this system, consumers can buy the item subject to the deposit in one shop (retailer A) before returning it to another shop participating in the scheme (retailer B) and reclaiming the deposit from this second shop, provided that retailer B also sells the bottler's brands.

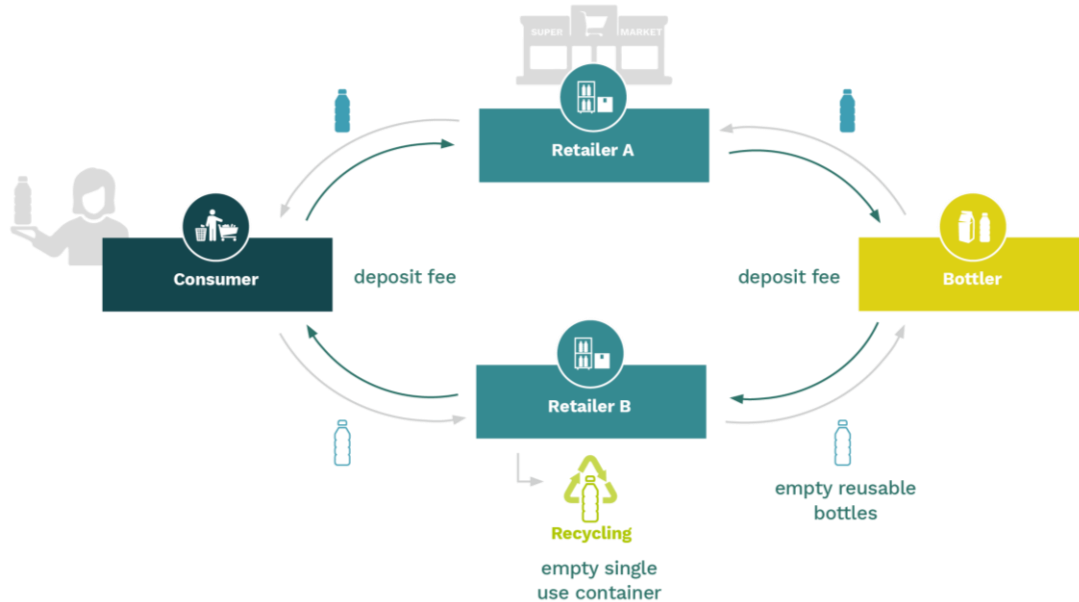


Figure 2: A DRS organised by a bottler

The retailers then report to the bottler how many bottles they have sold and how many have been returned to determine the net balance of sales and returns. Reusable empty bottles are returned to the bottler, while single use ones are sold on to recyclers.

This kind of DRS can only function if the bottler knows exactly which individual retailers are selling the items subject to the deposit.

DRS with clearing

DRS with clearing is another common type of DRS. Under this model, the consumer pays a deposit as part of the purchase price of the item concerned. However, in contrast to the other forms of DRS described above, they do not necessarily need to return the packaging to the original point of sale or to another shop selling items from the same bottler. Instead, they can **return the item to one of a range of retailers, who will refund their deposit** regardless of the bottler/brand that produced the item. This model is therefore much more flexible from the consumer's point of view. At the same time, the retailers purchasing items with deposits from bottlers, must pay them the deposit. The bottlers, in turn, must pay the deposit value of the bottles they put on the market to a **clearing organisation** separate to the PRO. The clearing organisation then has the task of ensuring that the system is balanced, i.e. that those retailers who have sold fewer bottles than were returned to them are paid the compensation.

The clearing organisation is therefore the central hub in this kind of deposit refund system, as it is responsible not just for reimbursing retailers, but also for organising and administering the system as a whole. The costs associated with this organisational activity are covered by the producers and importers. At the end of the DRS process, the retailers deliver the empty packaging containers to recyclers, or to the bottlers in case of reusable bottles.

Setting up such a DRS requires:

- Specific labelling or barcodes on the deposited packaging items.

- Significant upfront investment in order to establish the clearing organisation and install the return infrastructure, such as reverse vending machines.
- Extensive organisational and administrative work.
- A sound legal framework.

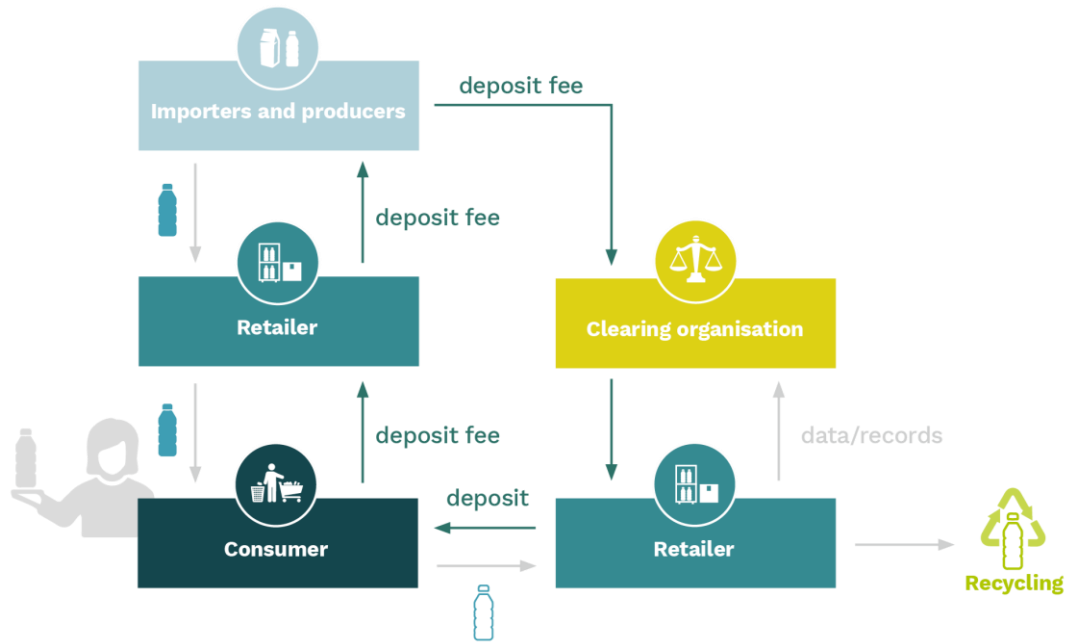


Figure 3: A DRS with clearing

DRS with clearing systems operate in a number of countries around the world, although the precise details of each individual system vary significantly given the complications associated with such schemes. Figure 3 provides a general, simplified overview of a DRS with clearing scheme.

Comparing the three models

Table 1: Comparing the three models for deposit refund systems

Criteria	Direct DRS	DRS organised through a bottler	DRS with clearing
Financial aspects	Very small investment for retailers or other organisations setting up the DRS.	Relatively low investment for bottlers.	Significant upfront investment required to set up the clearing organisation and return infrastructure, for instance installing reverse vending machines.
Organisational aspects & practicalities	Can be started on a voluntary basis. Light organisational and administrative burden. Consumer can only return deposited packaging at the original point of sale, and	Can be started on a voluntary basis by a bottler/packaging manufacturer, provided that they know exactly which retailers are selling the items covered by the scheme.	The clearing organisation is the central element in the DRS, and is responsible for administering and organising all aspects of the scheme. DRS with clearing systems

Criteria	Direct DRS	DRS organised through a bottler	DRS with clearing
	must present their receipt to reclaim the deposit.	<p>Relatively light organisational and administrative efforts.</p> <p>More flexible for consumers than a direct system; barcodes and labelling can remove the need to present a receipt.</p> <p>If multiple bottlers/manufacturers set up their own systems, this will make things complicated for retailers, and a clearing organisation might be needed to co-ordinate the different systems.</p>	<p>cannot work without specific labelling or barcodes.</p> <p>The most flexible option for consumers, and labelling or barcodes mean there is no need to keep receipts.</p>
Monitoring/supervision	Supervised by the retailer that sets up the DRS.	Supervised by the bottler that sets up the DRS.	The system is supervised by the clearing organisation. The clearing organisation is in turn monitored by an outside organisation.

Key readings and other sources



PREVENT Waste Alliance (2021).

Video series:

EPR Explained! (10.1) Deposit refund systems



PREVENT Waste Alliance (2021).

Video series:

EPR Explained! (10.2) Deposit refund system in Germany

CM Consulting (2018). Deposit systems for one-way beverage containers: Global overview.

TOMRA (2021). Rewarding Recycling: Learnings from the World's Highest-performing Deposit Return Systems. <https://www.tomra.com/en/collection/reverse-vending/deposit-return-schemes/white-paper>



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