

DEPOSIT-REFUND SYSTEMS FOR ONE-WAY BEVERAGE PACKAGING IN EUROPE



THE CASE OF SWEDEN

JANUARY 2019



DESCRIPTION OF THE SYSTEM¹

BACKGROUND FOR INTRODUCING THE SYSTEM

In the late 1970s, the discussion related to the possible introduction of a mandatory DRS on one-way aluminium cans in Sweden started. This was influenced by the fact that one-way packaging for beverages started to emerge while the use of refillable glass bottles started to decline. There was a strong movement in the society supported by environmental NGOs against one-way beverage containers related to littering problems and decline of the refillable glass system. A deposit system for refillable glass bottles had been introduced long time ago, around 1886-1888, running on a voluntary basis and a number of breweries had established a good distribution and collection networks for refillable glass bottles. The glass bottles in this system were standardised. The breweries were therefore unwilling to lose their market advantage with the introduction of one-way containers and were also supporting the movement against one-way beverage containers.

The industry initially strongly opposed the mandatory DRS but eventually had no other choice than to establish such a system. The following played a particular role: (1) societal pressure; (2) failure to achieve the recycling rate of 75% indicated by the government through voluntary collection trials; and (3) demonstrations projects showcasing that the collection would not create perceived hygienic issues. Therefore, in 1982, the industry created an organisation called Returpack as the operator of the DRS. Firstly, the DRS applied to aluminium cans (started 1984) and 10 years later (in 1994), it was expanded to PET bottles.

LEGAL BASIS, SCOPE AND TARGETS. LINKS TO OTHER POLICIES OR INSTRUMENTS

Currently, the main piece of legislation concerning deposit-return for aluminium cans and PET bottles is the Ordinance on return system for plastic bottles and metal cans². It states that all parties professionally serving or importing drinks ready for consumption in plastic bottles or metal cans must ensure that the product is included in an approved deposit-return system. The original legislation had a narrower definition for the materials subject to DRS – “aluminium” and “polyethylene terephthalate” (PET). The

1 Tojo, N. – Deposit Refund Systems in Sweden. International Institute for Industrial Environmental Economics. Lund University. 2011 [[report](#)].

2 Regulation 2005:220 – Förordning om retursystem för plastflaskor och metallburkar (SFS 2005:220) (Regulation on return systems for plastic bottles and metal cans) 2005 [[website](#)]

current law applies a broader definition – packaging made of “metal” and “primarily of polymer material” in order to reflect the development of new materials for beverage containers and current practices on the market.

The deposit requirement does not apply to drinks that contain 50% or more dairy products or vegetable, fruit or berry juice – these are registered with the approved national compliance scheme for household packaging Förpacknings & Tidnings Insamlingen (FTI). Since 2015 syrup³ manufacturers and since 2018 juice⁴ manufacturers can also voluntarily join the Returpak system. New logistic solutions have been introduced and the facilities are being adapted to the new flows⁵.

Table 1 : Type of packaging used for different beverage categories (in % of volume)⁶

Packaging data 2016	Can	PET	Refillable glass	Others*
Beverages with alcohol	65.14	1.61	7.95	25.3
Carbonated soft drinks	19.92	64.72	1.53	13.83
Other soft drinks	22.43	40.42	0	37.15
Bottled water	14.19	74.19	11.27	0.35
Total beverages sold in this type of packaging	35.91	41.84	5.09	17.15

* includes one-way glass, tanks, cartons and “bag-in-box” packaging types

The Ordinance on producer responsibility for packaging⁷ defines a minimum recycling rate of 90% for beverage packaging which falls under a DRS. No sanctions are foreseen in the legislation in case the targets are not reached.

The original legislation⁸ includes a mandate for DRS for PET bottles with a recycling rate of 90% regardless of whether they are refillable or one-way. Therefore, a system for refillable PET bottles was organised separately from the system for one-way PET, but it ended in 2008. Today, there are no refillable PET bottles or cans in Sweden. An additional DRS for refillable glass bottles exists – breweries/fillers themselves are responsible for organising the system for refillable containers.

Beverage cartons are excluded from the deposit system and are instead collected as part of the paper packaging collection system operated by the packaging PRO (FTI)⁹.

3 Syrups (“saft” in Swedish) are concentrated fruit or berry drinks mixed with water

4 Juice drinks with a fruit contain over 50%

5 Returpak – Historia (History) [\[website\]](#)

6 Sveriges Bryggerier – Fördelning på förpackningstyper (Distribution on packaging types) 2016 [\[website\]](#)

7 Regulation (2014:1073) – Förordning om producentansvar för förpackningar (2014:1073) (Regulation on producer responsibility for packaging) [\[website\]](#)

8 Act (1991:336) – Lag om vissa dryckesförpackningar (SFS 1991:336) (Act on certain beverage containers) [\[website\]](#)

9 Förpacknings & Tidnings Insamlingen – Paper Packaging [\[website\]](#)

SYSTEM FUNCTIONING, ROLES AND RESPONSIBILITIES OF MAIN STAKEHOLDERS

Deposit operator



Returpack was created in 1982 to operate the DRS for aluminium cans which started in 1984. Later, the legislation introduced similar requirement for PET bottles and the Returpack integrated these in the already existing system. Each material has its own accounting and no cross-financing between the two takes place.

Returpack is the only existing return system approved by the Swedish government. It is a privately-owned company operating on a non-for-profit basis. Its current owners¹⁰ consist of representatives from the brewery sectors (50%) and retailer associations¹¹ equally shared between large (25%) and small/individual retailers (25%).

Returpack organises the overall activities needed for the DRS for one-way metal cans and plastic bottles, in coordination with a number of actors. It collects deposits and administration fees from producers and pays back to retailers the deposits for the beverage containers returned by consumers, as well as handling fees as compensation. The empty cans and bottles are brought to depots (intermediate collection facilities) and then transported to facilities run by Returpack. The metal cans are baled together and sold to smelters abroad. The smelters sell back metal roll sheets to the can manufacturer in Sweden. The PET bottles are sorted into coloured and non-coloured and are baled. The bales are delivered to a PET recycling facility located close by¹².

A total turnover of the company was 2.7 billion SEK (266 million EUR) in 2017¹³. The composition of the revenues is split in a fairly even way between administration and sorting fees, material sales and unredeemed deposits, each accounting for approximately 1/3 of total revenues.

Producers

Every manufacturer or importer of beverages in cans or plastic bottles is obliged under legislation to include their product in an approved DRS. In order to be part of the system, obliged parties have to pay an affiliation fee¹⁴ of 10,000 SEK [985 EUR] (which goes directly to the Swedish Board of Agriculture) and to pass a credit-worthiness check with Returpack. The latter includes registration of each product and sending samples of the packaging. The packaging has to comply with defined technical specifications (concerning material, thickness, colour, contents, shape, and barcode legibility) to ensure that the containers will function throughout the entire recycling system – from collection to the manufacturing of new bottles or cans. Any packaging joining the system has to be clearly marked in accordance with Returpack's marking instructions (e.g. barcodes, deposit marks). All planned changes to already registered products must first be communicated and approved by Returpack. For each packaging marked with a company's barcode, the manufacturers and importers have to pay a deposit and applicable fees (administration fee and sorting fee) to Returpack.

10 Initially Returpack was owned by a large aluminium can manufacturer (48%), breweries (48%) and retailers (4%).

11 Sveriges Bryggerier – the Swedish Brewers Association, Livsmedelshandlarna – the Association of small and individual retailers and Svensk Dagligvaruhandel – the Association of large retail chains

12 The recycling facility of Cleanaway has been cooperating with Returpack since 2006-2007.

13 PANTALERA – Ägare och ledning (Owner and management) [[website](#)]

14 Producers of fruit juices which are not obliged to join the system, but can do so voluntarily as of 2015, are exempt from the affiliation fee. PANTAMERA – Anslut er till pantsystemet (Answering to the mortgage system) [[website](#)]

Table 2: Deposit, sorting and administration fees paid by producers¹⁵ (sorting and administration fees are VAT excl.)

	Aluminium can	Steel can	Clear PET bottle		Coloured PET bottle	
			<= 1 l	> 1 l	<= 1 l	> 1 l
Deposit (VAT included)	1 SEK [0.10 EUR]	1 SEK [0.10 EUR]	1 SEK [0.10 EUR]	2 SEK [0.20 EUR]	1 SEK [0.10 EUR]	2 SEK [0.20 EUR]
Sorting fee		0.25 SEK [0.02 EUR]			0.05 SEK [0.005 EUR]	0.05 SEK [0.005 EUR]
Administration fee			0.22 SEK [0.02 EUR]	0.52 SEK [0.05 EUR]	0.22 SEK [0.02 EUR]	0.52 SEK [0.05 EUR]

The deposit paid will be refunded by the consumer purchasing the beverage. Manufacturers and importers also have to report to Returpack their sales per barcode (i.e. amount of respective packaging sold and level of deposit) on a monthly basis¹⁶.

Retailers

Retailers are not obliged to take back empty beverage containers. They can voluntarily join the system for free and as Returpack customers are entitled to receive a compensation of both the deposit and a handling fee for the additional costs incurred because of the deposit management (RVM, servicing, staff, space, material).

There are 14,000 such collection points (including supermarkets, small cafés, restaurants, sport clubs, airports, etc.) and 95% of the collected volume is done at food retail markets. Containers returned by consumers to the shops are collected by Returpack-approved vehicles and vessels and brought to Returpack facilities. Retailers which have registered as customers can either be equipped with their own RVM (around 3,000 customers) or can do the necessary operations manually. There are two options for retailers using RVM: (1) 94% of the shops have their collected containers picked up loose by a dual compartment truck operated by Returpack; (2) shops in more isolated locations (countryside or islands) have their containers collected in approved bags/ cardboard boxes which are then picked up by their wholesalers/ beverage suppliers and delivered to a facility operated by Returpack¹⁷. In 2017, 96% of the total quantities were collected via RVM (including the bulk-collection version called Pantamera express).

In all cases, the containers delivered to Returpack must be sorted – i.e. plastic bottles must be separated from metal cans in order to get reimbursed for the deposit fee. The RVM sort this automatically. The quality of materials is also important – any glass or other impurity can result in the compensations not being paid out¹⁸. Collection and transport from the shops is paid for by Returpack.

15 PANTAMERA – Returpack – Appendix 3 Deposit and fees [[Appendix](#)]

16 PANTAMERA – Returpack – Breweries and importers [[website](#)]

17 PANTAMERA – Returpack – Shops [[website](#)]

18 PANTAMERA – Returpack – Customers and Partners [[website](#)]

Table 3: Handling fees in 2018¹⁹ (indicated amounts are excluding VAT of 25%)

	RVM (picked up loose)	RVM (in bag/ cardboard box)	Manual collection
PET bottle ≤ 1 l	0.258 SEK/unit [0.024 EUR/unit]	0.316 SEK/unit [0.03 EUR/unit]	0.2 SEK/unit [0.019 EUR/unit]
PET bottle > 1 l	0.345 SEK/unit [0.033 EUR/unit]	0.503 SEK/unit [0.048 EUR/unit]	0.2 SEK/unit [0.019 EUR/unit]
Metal can	0.174 SEK/unit [0.016 EUR/unit]	0.190 SEK/unit [0.018 EUR/unit]	0 SEK/unit [0 EUR/unit]
Fixed compensation	20,000 SEK/year [1,926.19 EUR/year]	20,000 SEK/year [1,926.19 EUR/year]	

The recycling system means that a deposit is attached to beverage packaging put on the market and it follows the packaging at all stages of the journey from the manufacturer or importer and the retailer to the consumer. The consumer returns empty packaging to the retailer, whereupon the retailer controls that the packaging is part of the recycling system and returns the deposit to the consumer. The control is mainly carried out by means of registering and counting the packaging in RVMs with the help of the barcode, whereupon the retailer gathers and delivers the packaging to the collecting party in containers approved by Returpack. For such mechanically counted packaging Returpack reimburses the retailer for the deposit and provides additional handling compensation on the basis of the reading of RVMs in accordance with an agreement between Returpack and the retailer. In turn, the collecting party also debits Returpack a collecting fee based on the number of containers with material that the respective collecting party has delivered for recycling in accordance with an agreement between Returpack and the collecting party. Returpack receives money when selling cans/bottles to smelters/ recycling plants.

Consumers

When buying a beverage packed in a metal can or plastic bottle, consumers see the deposit they have to pay printed on the packaging itself and on the receipt they receive at the cashier. When returning the cans/ bottles to an automated machine, consumers receive a ticket with the amount which is to be refunded to them at the retail. Alternatively, they can choose to donate the money to a charity instead.



Figure 1: Pantamera Express

In addition to returning empty packaging in stores, consumers can use a deposit return bank (Pantamera Express) to dispose of their empty bottles and cans. Bags filled with cans and PET bottles (up to 100 units) can be emptied in a compartment of the station. Customers can choose to receive a payment: through a check that can be used in a grocery store or through a bank/PayPal transfer. Alternatively, they can decide to donate the deposit amount to a charity. The Pantamera Express are located at recycling centres across Sweden. In 2018, there are 30 such machines²⁰.

¹⁹ PANTAMERA – Returpack – Hanteringsersättning 2018 (Handling remuneration 2018) [[report](#)]

²⁰ PANTAMERA – Pantamera Express [[website](#)]

Additionally, Returpack uses a mobile collection station (Pant-o-Bil) to facilitate the collection of cans and bottles in festivals. Similarly to Pantamera Express, by returning their packaging to Pant-o-Bil, consumers can choose how to receive the deposit back in the form of a check to be used in a grocery store or through a bank/PayPal account²¹. For larger music festivals, Returpack has developed other solutions by offering large-scale operations to handle all packaging with deposit generated at the festival.



Figure 2: Pant-o-bil



Figure 3 : Pantamera Tube

Furthermore, Returpack offers to municipalities to establish Pantamera “tube” – an additional bin placed next to a public waste bin. The aim is to encourage consumers to place their empty cans and bottles separately instead of throwing them away in a general waste bin, and to allow others who are willing, to pick them up and return them to a collection point where a deposit can be received²².

Lastly, Returpack offers non-for-profit organisations to collect bags filled with cans and bottles and receive a flat rate of 200 SEK [19.7 EUR] per bag. To do so, an NGO has to register with Returpack. Upon registration it receives a set

of bags and labels suited for collected bottles and cans. Once a bag is filled, the participating organisation has to leave it at a designated collection point from which Returpack picks up the bags. A flat rate payment is made if the bags are filled correctly: (1) cans and Pet bottles cannot be mixed in one bag; (2) bags have to be filled completely. Imported or damaged cans are also accepted through this system²³.

Supervision

The Swedish Board of Agriculture²⁴ is the supervisory authority and the Swedish Environmental Protection Agency²⁵ is responsible for the official statistics. The affiliation fee paid by producers goes entirely to the Board of Agriculture to finance inspections in retail stores. The authority can hand out fines to shops that sell beverage products without deposit²⁶.

21 PANTAMERA – Idag rullar Pant-o-bilen in i Linköping (Today, Pant-o-car rolls into Linköping) [[website](#)]

22 PANTAMERA – Hälften av landets kommuner har pantrör – nu erbjuder Pantamera alla kommuner att testa (Half of the country's municipalities have shelter pipes - Pantamera now offers all municipalities to test). 2018 [[website](#)]

23 PANTAMERA – Så går det till (That is how it goes) [[website](#)]

24 Jordbruksverket – Home [[website](#)]

25 Naturvårdsverket – Home [[website](#)]

26 Jordbruksverket - Recycling system for plastic bottles and metal cans [[website](#)]

RESULTS

The introduction of the DRS for both metal cans and PET bottles led to a sharp increase of source separation for these products. Since 2000, the recycling rate for metal cans has varied between 85% and 93%. In 2016 it was 86.2%²⁷. This represents a decrease of 5 percentage points from the previous year and the first time in five years that the 90% recycling target had not been met. The decrease is influenced by the change of calculation methods²⁸. In 2017, the recycling rate for metal cans reached 85.7% and for plastic bottles 84.1%²⁹. The return rate of containers has been high but not reaching the 90% prescribed by the law. Since the introduction of the DRS for cans, the amount of the deposit has been increased twice leading to increases in the collection rate. There was no similar change for PET bottles, where lower return rates are recorded in particular for smaller bottles.

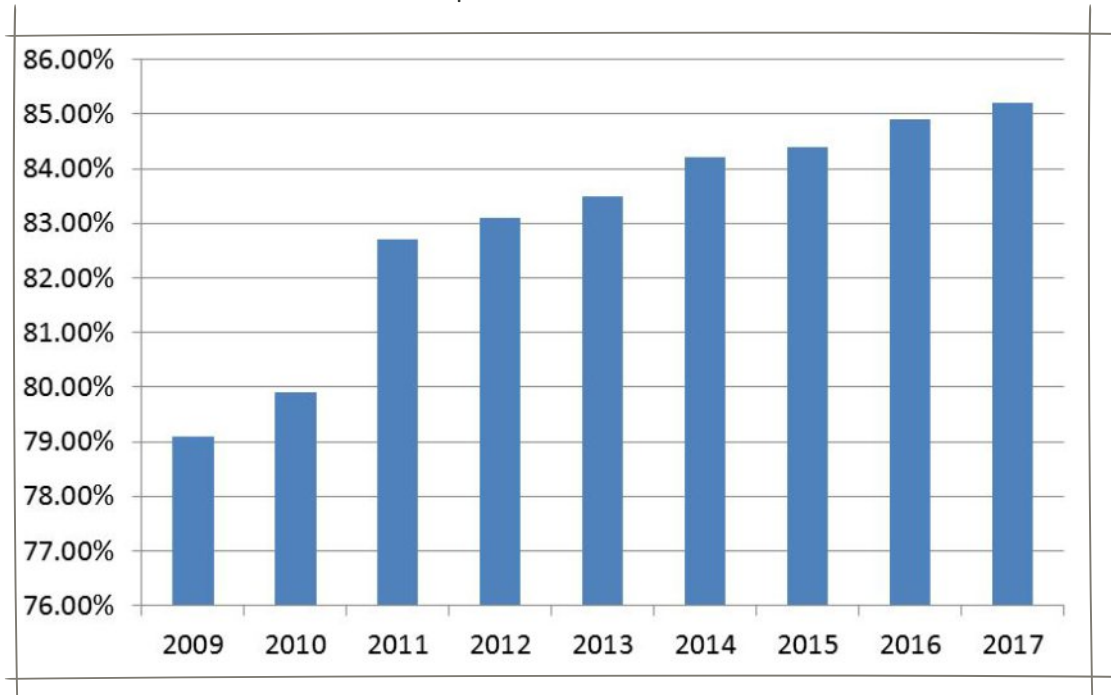


Figure 4: Recycling rates for bottles and cans collected through the Returpack system

The DRS for metal cans allows to “close the loop” for this material. Regarding PET bottles, only the clear ones can be processed into food grade. Since around 80% of the PET bottles put on the market are clear and 20% are coloured, on average about 70% of the PET collected by Returpack is used directly for the manufacturing of new PET bottles, the rest is going into other applications³⁰.

The DRS for one-way beverage containers is generally well accepted by different stakeholders, both nationally and internationally. The Swedish consumers had already sorting habits due to the fact that the return system for glass bottles had been long established and well-functioning since decades, the introduction of the system for one-way beverage containers was therefore well received by the wider public. This is further enhanced by several aspects of consumer convenience of the system – for instance, the fact that retailers act as collection points and, therefore, consumers can return containers and do their shopping at the same time, as well as the fact that retailers accept empty containers even if those were originally purchased at a different store.

²⁷ Returpack – Pantstatistik (Deposit statistics) [[website](#)]

²⁸ Naturvårdsverket – Resultat av producentansvaret (Producer responsibility results) [[website](#)]

²⁹ Returpack – Pantstatistik (Deposit statistics) [[website](#)] and Naturvårdsverket – Sveriges Återvinning av Förpackningar och Tidningar. Uppföljning av producentansvar för förpackningar och tidningar 2017 (Sweden's Recycling of Packaging and Newspapers. Follow-up of producer responsibility for packaging and newspapers) [[report](#)]

³⁰ Cleanaway – The URRC process [[website](#)]

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Disclaimer

This country report is based on publicly available information gathered by ACR+ team and validated by Returpack.

Deposit-refund systems for one-way beverage packaging in Europe

This country report is part of a wider study of ten deposit-refund systems in Europe covering the following countries: Croatia; Denmark; Estonia; Finland; Germany; Iceland; Lithuania; the Netherlands; Norway and Sweden.

The full report is available for ACR+ members on www.acrplus.org.
