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



## THE CASE OF NORWAY

JANUARY 2019



## DESCRIPTION OF THE SYSTEM

### BACKGROUND FOR INTRODUCING THE SYSTEM

Norway has a long history of deposits as the first system for refillable glass bottles was established back in 1902. In 1974, a tax on beverage packaging was introduced<sup>1</sup>. The following years have been a period of much discussion between the producers and the government in order to convince the authorities to establish a link between performance and the amount of tax which is due<sup>2</sup>. Since 1994, the tax is composed of two elements: a basic tax<sup>3</sup> and an environmental tax which decreases proportionally above 25% return rate. There is a full rebate of the environmental tax if the return rate is above 95%. The reduction is not applied to the basic tax, which remains regardless of the return rate<sup>4</sup>. Prompted by this legislation, in 1996, the beverage producers and retailers decided to establish a company (Norsk Resirk) to handle recyclable cans and plastic bottles through a deposit system. They had an interest in achieving high return rate of empties in order to reduce their environmental levy. The company changed its name to Infinitum in 2014.

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

Specific regulations of the Ministry of Finance subject non-refillable beverage packaging sold on the Norwegian market both to a fixed basic tax, due for every one-way packaging independent from the return rate, and a variable environmental tax<sup>5</sup>.

Table 1: Taxes on non-refillable beverage packaging<sup>6</sup>

	Basic tax	Environmental Tax
Glass and metal	1.19 NOK [0.12 EUR]	5.79 NOK [0.59 EUR]
Plastic		3.44 NOK [0.36 EUR]

1 Government of Norway – The history of green taxes in Norway. 2007 [[website](#)]

2 Infinitum – Milestones [[website](#)]

3 The basic tax is payable if the packaging cannot be used again in its original form. There are some exemptions from the environmental tax (if packaging is used for beverages in powder form or breast milk substitutes) and from the basic tax (ex. if one-way packaging is used for beverages containing milk, cocoa, or cereal- or soya-based milk substitutes). The Norwegian Tax Administration – Excise duties: Beverage packaging [[website](#)]

4 Infinitum – The environmental tax system [[website](#)]

5 The rate is set for packaging covered by an approved return scheme. The Norwegian Tax Administration – Excise duties: Beverage packaging [[website](#)]

6 The rate is set for packaging covered by an approved return scheme. The Norwegian Tax Administration – Excise duties: Beverage packaging [[website](#)]

The size of the environmental tax falls proportionally as the rate of return increases and is not applicable if the return rate is above 95%. The tax applies to wine and spirits, beer and non-alcoholic drinks in primary packaging. Dairy beverages are exempt from the basic tax<sup>7</sup>.

Norway is not a member of the EU, but it is a member of the European Free Trade Area (EFTA) and has signed the European Economic Area (EEA) agreement. According to the agreement, Norway has to apply all relevant EU legislation, including the environmental directives<sup>8</sup>. The EU Directive for packaging and packaging waste has been implemented through voluntary agreements between the authorities and the business sector, retaining the targets in the directive<sup>9</sup>.

Post-consumer packaging flows in Norway are handled by several operators through different collection systems according to the specific type of packaging. One-way plastic bottles and metal cans for beverages subject to deposit are managed by Infinitum. One-way glass and metal packaging is collected by Syklus/ Sirkel – Norway’s oldest material company which ensures that 100% of the glass packaging collected will be materially recycled into new products<sup>10</sup>. Beverage cartons together with cardboard, paper and plastic non-beverage packaging is collected by Grønt Punkt Norge (Green Dot Norway). One-way glass and beverage cartons are not subject to a deposit but are financed through producer fees. Refillable glass and refillable plastic bottles were collected through a system operated by the Norwegian brewers and soft drinks producers named Rentpack. For refillables, the same deposit rates applied as to non-refillable bottles and cans<sup>11</sup>. The last refillable glass and plastic bottles were put on the market in January 2014 and Rentpack closed their business 1 September 2018.



Figure 1: Collection of beverage containers in Norway (source: Infinitum)<sup>12</sup>

## SYSTEM FUNCTIONING, ROLES AND RESPONSIBILITIES OF MAIN STAKEHOLDERS

### The deposit operator



Founded in 1996 under the name of Norsk Resirk, the deposit operator is owned by the beverage

7 Infinitum – How to join [\[website\]](#)

8 ETC/SCP – Municipal waste management in Norway. European Environment Agency 2013 [\[report\]](#)

9 Norwegian Environmental Agency – Regulations relating to the recycling of waste, Chapter 7 – Packaging waste. [\[website\]](#)

10 Avfall Norge – Syklus, 15 år som hovedsponsor av Avfallskonferansen (Syklus, 15 years as the main sponsor of the Waste conference). 2017 [\[website\]](#)

11 Norden – The Use of Economic Instruments in Nordic Environmental policy 2010 – 2013. Nordic Council of Ministers 2014 [\[report\]](#)

12 Infinitum – Presentation “What is “best in class” deposit return, and how much does it cost producers?” 2016 [\[presentation\]](#)

producers and Norwegian grocery producers. It started operations in 1999. In 2014, it changed its name to Infinitum inspired by the endless number of times bottles and cans can be recycled in the deposit scheme<sup>13</sup>.

Infinitum is in charge of administering the DRS for one-way plastic bottles and metal cans, including organisation of collection, transport, and recycling activities.

Producers and importers of beverages in one-way cans or plastic bottles can register their products in the deposit system of Infinitum. They pay a fee to Infinitum to label the packages with the deposit symbol and get the deposit back for all the bottles received back from consumers. The deposit values applicable until recently corresponded to those stated in the Waste Regulations<sup>14</sup> relating to the recycling of waste. In 2018 the decision was taken to raise the deposit values in order to increase return rates even further. Infinitum believes that this would increase the return rate to over 90%<sup>15</sup>.

Table 2: Deposit values

Type of container	Beverage cans and plastic bottles	
	< 0.5 l	≥ 0.5 l
Deposit values (until 1 Sept 2018)	1 NOK [0.10 EUR]	2.5 NOK [0.26 EUR]
Deposit values (as of 1 Sept 2018)	2 NOK [0.20 EUR]	3 NOK [0.30 EUR]

Infinitum has three processing plants where the bottles and cans are transported after collection. The biggest is situated near Oslo and is handling approximately 80% of the total collected amounts. The first step in the process is sorting out the aluminium and steel cans. Next the clear and light blue bottles are sorted, followed by the coloured bottles. All separated fractions are then compressed into bales and sent for further recycling<sup>16</sup>.

### Producers

Producers and importers of beverages sold in one-way plastic bottles or metal cans are not obliged to join the DRS. However, by joining it, they get a reduction on their environmental tax which is equivalent to a full tax exemption, given the high return rates above 95%. If they want to join the system, producers have to follow a set of rules regarding the marking and technical specifications of the containers. To join Infinitum, they have to pay a one-time registration fee for the company and a fee for each new packaged product put on the market. Additionally, producers are required to pay administrative fees to Infinitum.

13 Infinitum – Infinitum’s history [[website](#)]

14 Norwegian Environmental Agency – Regulations relating to the recycling of waste, Chapter 6 – Take-back systems for beverage packaging. [[website](#)]

15 Infinitum – Deposit on cans and bottles doubles [[website](#)]

16 Green Visits – Deposit system for beverage packaging [[website](#)]

Table 3: Administrative fees paid by producers<sup>17</sup>

Type of material	Metal		Plastic	
	Aluminium	Steel	PET	HDPE
Registration fee (one-time)	10,000 NOK [1,028 EUR]			
Fee for each new packaged product put on the market	2,000 NOK [205 EUR]			
Basic fee per unit	0.00 NOK [0.00 EUR]	0.21NOK [0.021 EUR]	0.18 NOK [0.018 EUR]	0.18 NOK [0.018 EUR]
Additional fee per unit				
If a standard barcode is used and the product is traded also outside Norway	0.03 NOK [0.003 EUR]			
If label covers more than 75% of the packaging	0.03 NOK [0.003 EUR]			
Light blue transparent packaging			0.08 NOK [0.018 EUR]	
Other colour or if label is covering more than 75% of the packaging			0.15 NOK [0.015 EUR]	

Each container must feature a barcode (to be read by the RVM) and a deposit mark (clear symbol for consumers and manual treatment staff). Bottles and cans need to undergo a series of technical testing before market launch to ensure that they are recognised by RVM and can be properly tracked in the system. In addition, there are specific requirements for PET bottles regarding the shape, material, cap, label, and glue, to ensure these will not negatively impact the recycling process<sup>18</sup>. If beverage packaging fails to satisfy applicable requirements, products that have already been shipped to market may not be approved; they may thus not qualify for a fee reduction.

### Retailers

All retailers selling beverages bearing a deposit label are obliged to accept back empties. Each retailer or shop needs to register as a collection shop with Infinitum (registration is free), but can decide how to organise the collection on their premises – either with a RVM or as a manual collection point. There are around 3,700 RVM in Norway and 12,000 registered manual points where consumers can return their empty containers<sup>19</sup>.

Most retailers have opted for collection via RVM that compress the bottles and cans. In this case, the retailer must enter into an agreement with a machine supplier approved by Infinitum. The RVM reads the barcode on the containers and issues a deposit note to the consumer. The retailers are responsible

<sup>17</sup> Infinitum – Cost Calculator [[website](#)]

<sup>18</sup> Infinitum – How to join [[website](#)]

<sup>19</sup> Infinitum – 2017 in numbers [[website](#)]

for preparing collected packaging for transportation by storing them in specific traceable bags, with barcode and RFID chip, approved by Infinitem<sup>20</sup>. A transporter collects the empties free of charge and sends them to be recycled at an Infinitem production facility. The machine supplier receives the return data and transmits it to Infinitem who issues a clearing statement for the deposited empties and a handling fee. The initial investment for the machines is done by the retailers, but they also receive a larger handling fee from Infinitem because the compression helps reducing transport costs<sup>21</sup>.

With manual collection or in case of RVM which do not compress the empties, retailer’s staff manually controls the deposit symbol and makes sure that the packaging itself and markings are not damaged before returning the deposit to the consumer. Infinitem does not refund retailers in case the barcode is unreadable or the deposit symbol is missing. The staff fills the drink container into an “Infinitem bag”, placing special seals and stickers from Infinitem in order to identify the retailer. A transporter collects the bags free of charge and delivers them to an Infinitem processing facility, where the contents of the bag are counted and a deposit settlement to the retailer is issued based on the count<sup>22</sup>.

Table 4: Handling fees reimbursed to retailers according to type of collection and material

Handling fee/ unit	Beverage cans	Plastic bottles
With RVM (compression) <sup>23</sup>	0.2 NOK [0.02 EUR]	0.25 NOK [0.025 EUR]
Without RVM compression or manual <sup>24</sup>	0.05 NOK [0.005 EUR]	0.1 NOK [0.01 EUR]

## Consumers

Consumers can return their empty beverage containers and receive their initial deposit back in any of the registered collection points. In addition, they have several other options to give back their empties without the refund.

Infinitem further offers special arrangements for other initiatives to collect bottles and cans, especially for points where large quantities are generated, for instance in schools and sport clubs or during major events such as music festivals<sup>25</sup>. There is a special arrangement between Infinitem and the Norwegian Red Cross to collect empty containers in mountain and hiking areas through more than 1,000 collection points throughout the country. This provides a service to holidaymakers and residents who are far from retailers and other collection points, while also financing Red Cross activities. Under the arrangement, the rescue corps is in charge of deploying the collection containers and informing the local community and they are reimbursed for the collected deposits and a handling fee<sup>26</sup>.

A recent project is the partnership between Infinitem and the Norway’s largest online grocery store, Kolonial.no. Together, the two companies set up a system that enables the collection of empty bottles and cans directly from households. Customers buy rolls of five 50 l bags, which can be filled with empties. The delivery service collects the bags of empties and brings them back to the Kolonial.no warehouse. From there, the empties are shipped to Infinitem, where they are counted, before the money gets deposited into the customers' account. This is still only covering certain regions but the goal for the future is to expand this system to the whole country<sup>27</sup>.

20 Infinitem – Informasjon (Information) [[website](#)]

21 Infinitem – Collection points with a reverse vending machine [[website](#)]

22 Infinitem – Manual collection [[website](#)]

23 Infinitem – Collection points with a reverse vending machine [[website](#)]

24 Infinitem – Manual collection [[website](#)]

25 Infinitem – Collection schemes [[website](#)]

26 Infinitem – The Norwegian Red Cross [[website](#)]

## Supervision

Recycling numbers are being reported annually to the Norwegian Environment Agency which also approves DRSs. A precondition for the approval is that it achieves a minimum of 25% return rate and that the packaging is subject to environmentally sound recycling. Energy recovery is not allowed or only if justified. The Environment Agency further sets the return rate that the deposit system is expected to achieve. The rate is set in advance for up to one year and serves as a basis for the reduction of the environmental tax<sup>28</sup>. If there need to be any further adjustments, additional payments or refunds, companies have to report it via an online system<sup>29</sup>.

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27 Infinitem – Annual report 2016 [[report](#)]

28 Norwegian Environmental Agency – Regulations relating to the recycling of waste, Chapter 6 – Take-back systems for beverage packaging. [[website](#)]

29 The Norwegian Tax Administration – Excise tax return [[website](#)]

# RESULTS

In 2011, the recycling rate for plastic bottles went above 95% and as a consequence the environmental tax was not applicable anymore. Similarly, in 2012, the 95% threshold was reached for cans. The materials collected via deposit-return deliver the largest share to recycling. In 2016, it represented 86.74% for plastic bottles and 85.10% for cans. The remaining quantities were recycled from waste, including from main sorting, slag sorting, source sorted materials, and utilized energy, amounting to 8.42% for plastic bottles and 12.29% for cans.

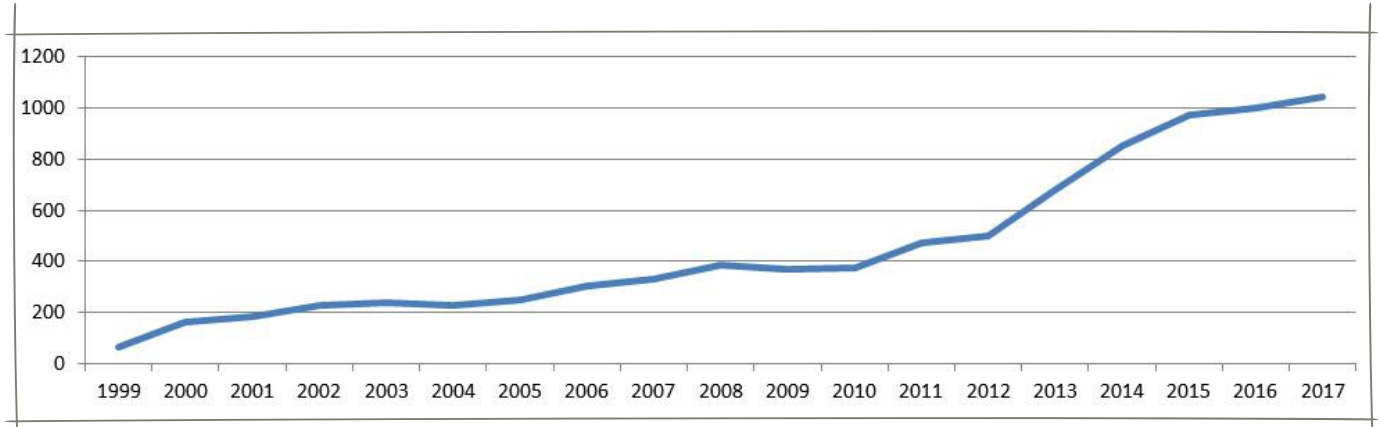


Figure 3: Collection figures 1999-2017 (in millions of units)<sup>30</sup>

There is 100% recycling of the collected materials<sup>31</sup>. As only clear bottles can be recycled back into new bottles, the closed-loop recycling stands at 92% and the rest is recycled into other products. The cans are recycled into aluminium ingots which can be used for new cans or other products.

In 2016, company’s total operating revenues amounted to around 1.92 billion NOK [200million EUR], while operating costs were 1.86 billion NOK [194 million EUR].

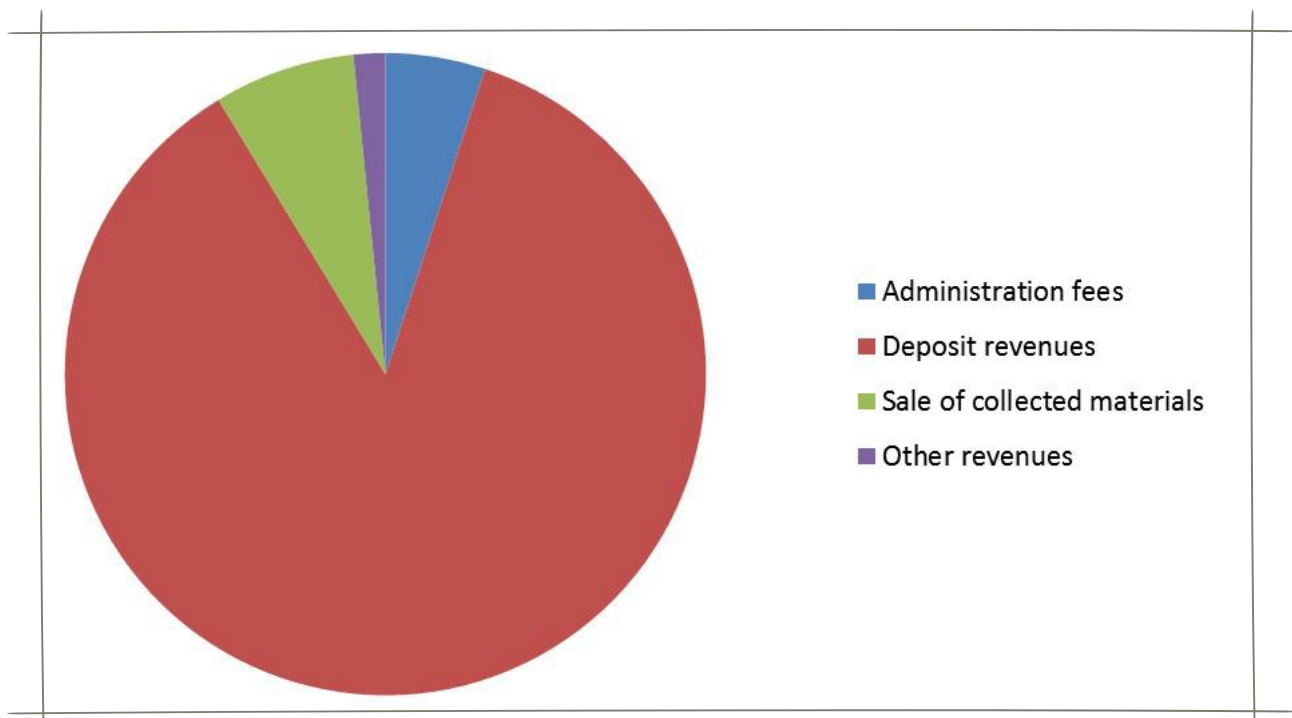


Figure 4: Operating revenues<sup>32</sup>

<sup>30</sup> Infnitum – Annual report 2017. [\[website\]](#)

<sup>31</sup> Green Visits – Deposit system for beverage packaging [\[website\]](#)

<sup>32</sup> Infnitum – Annual report 2017. p. 48 [\[report\]](#)



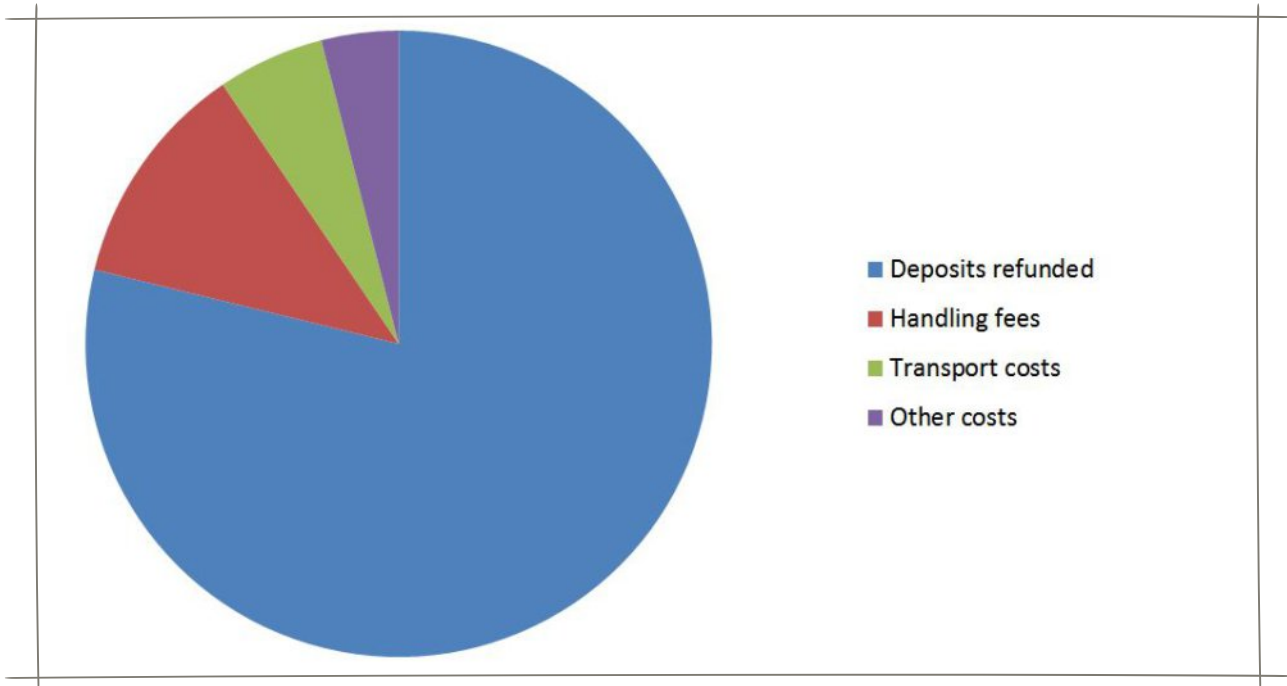


Figure 5: Operating costs<sup>33</sup>

According to the words of Infinitem’s Managing Director, in 2016, for the first time, Norwegians stated that considerations for the environment are the most important reason for them to return containers in the deposit system. Surveys show that saved energy and the environment are just as important as the money they get back from the deposit<sup>34</sup>.

In 2016, communication campaigns focused on the energy lost if plastic bottles or cans are thrown in the residual waste instead of being returned. This approach was taken since the deposit value is not worth as much to consumers now as it used to be and Infinitem wanted to communicate other advantages of the deposit system. The figures used in this campaign were used from two LCA reports commissioned by Infinitem. Results from survey conducted after the campaign show that consumers were indeed motivated to return their empty containers because of the environment and energy rather than because of the deposit money<sup>35</sup>.

33 Infinitem – Annual report 2017. p. 48 [\[report\]](#)

34 Infinitem – Annual report 2017. p. 48 [\[report\]](#)

35 Infinitem – Annual report 2017. p. 48 [\[report\]](#)

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### **Disclaimer**

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

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## **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](http://www.acrplus.org).

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