
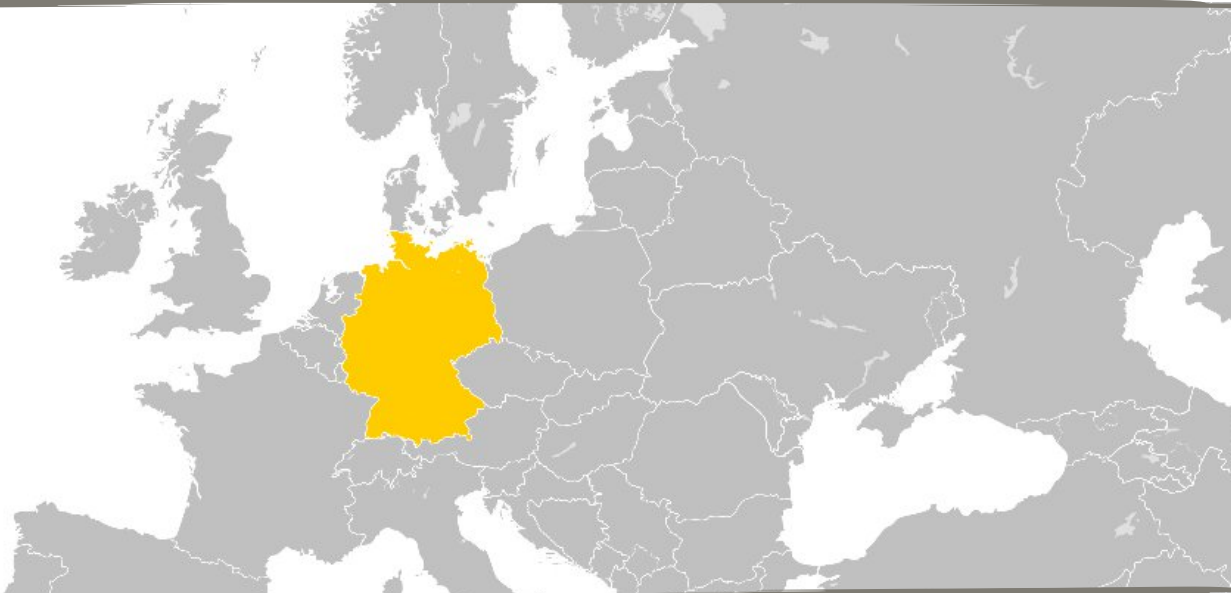




ACR+

[www.acrplus.org](http://www.acrplus.org)

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



## THE CASE OF GERMANY

JANUARY 2019



## DESCRIPTION OF THE SYSTEM

### BACKGROUND FOR INTRODUCING THE SYSTEM<sup>1</sup>

Packaging waste had become a big political issue in Germany in the late 1980s. It came at a time when local authorities had difficulties to politically agree and to finance new landfills and new incinerators. During the same time the Federal Government intended to implement a mandatory deposit on one-way beverage containers, as well as to introduce measures to increase the share of refillables. Being faced with the prospect of a mandatory deposit system and wishing to avoid it, the industry, under the leadership of the retail sector, agreed with the government the setting up of a system for collection and treatment of household packaging waste. This system would be entirely financed and managed by the industry and would run in parallel to the waste management system run by local authorities (hence the name “dual system”). This is how the first producer responsibility organisation for packaging – Duales System Deutschland (DSD) was founded and started operations. In return, the government promised to stop their plans regarding the deposit.

However, the idea of a mandatory deposit was retained in the regulations within the German Packaging Ordinance of 1991. The Ordinance mandated a national market share of refillable drinks packaging of 72%. In the case of inferior quota a mandatory deposit would be imposed on non-refillable drinks packaging of any material in the drink categories that fall behind their 1991 level.

In 1997 the market share of refillables fell below 72% for the first time marking a start to a trend which only accentuated in the following years. This led to the introduction of a mandatory DRS as of January 2003. This decision faced very strong opposition by the industry and led to strong fights with the Ministry of Environment and politicians<sup>2</sup>. As a result, the initial system had some critical drawbacks (eg. number of exceptions, “island solutions” – i.e. a situation where retailers accepted only packages which they sold, in absence of a coherent clearing system). Several major changes and optimisations to the initial system took place until May 2006, when the real and nationwide DRS commenced.

1 Information in this section is coming mainly from Groth, M. – A review of the German mandatory deposit for one-way drinks packaging and drinks packaging taxes in Europe. University of Lüneburg. Working Paper Series in Economics. 87. 2008 [[study](#)]

2 Quoden, J. – Rechtsanwalt Joachim Quoden. Case study Germany. 2012 [not public]

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

The main piece of legislation concerning packaging, including the DRS, is the German Packaging Ordinance<sup>3</sup>. According to this Ordinance, the deposit of minimum 0.25 EUR including VAT has to be levied on the following one-way beverage packaging:

- Of a volume between 0.1 l and 3 l;
- Made out of materials which are considered as “non-ecologically advantageous”;
- Containing specific types of drinks and explicitly including beer, water, soft drinks, and alcohol-containing drink mixes.

Not subject to the deposit are drinks in packages which are considered as “ecologically advantageous”: beverage cartons, polyethylene pillow bags, and stand-up pouches. Further, the following drinks are excluded from the deposit: fruit and vegetable juices, dairy drinks (more than 50% milk content), beverages intended for child/ baby consumption, wines, and liquors. These are subject to specific food regulations. In addition, according to the Federal Ministry of Environment, they represent only a marginal fraction of the market and, therefore, do not justify the efforts required for the application of a take-back and deposit system<sup>4</sup>.

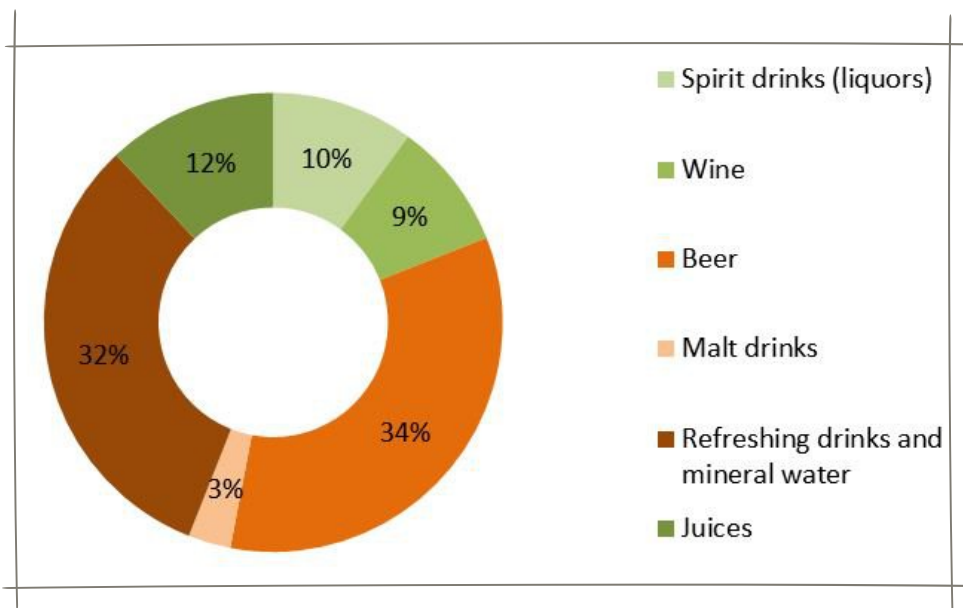


Figure 1: Market share of beverage categories (in % of turnover) in 2015<sup>5</sup>

One-way packages of beverages not covered under the DRS are collected through the dual system for household packaging waste. There is a separate voluntary deposit system for refillable glass and PET beverage packaging. The deposit value for the majority of refillables is 0.08 EUR or 0.15 EUR, with some exemptions for “exotic” refillable bottles.

However, the deposit for eligible one-way containers is 0.25 EUR flat for all sizes and materials<sup>6</sup>.

3 Ordinance VerpackV – Verordnung über die Vermeidung und Verwertung von Verpackungsabfällen (Verpackungsverordnung – VerpackV) (Ordinance on the prevention and recovery of packaging waste (Packaging Ordinance – VerpackV)). 1998 [[ordiance](#)], last amendment in July 2017, §9 of the Ordinance concerns the deposit

4 BMUB – Fragen und Antworten zur Pfandpflicht. (Questions and answers about the compulsory deposit). 2014. [[report](#)]

5 WMP Consult – Zukunft der Getränkeindustrie – Entwicklung von Markt, Beschäftigung und Arbeitsbedingungen (The future of the beverage industry - development of market, employment and working conditions). 2016 [[report](#)]

6 Deutsche Umwelthilfe – Hintergrundpapier: Informationen zum umweltfreundlichen deutschen Mehrwegsystem (Background paper: Information on the environmentally friendly German reusable system). 2014 [[report](#)]

The recycling targets are contained in the Packaging Ordinance<sup>7</sup>, which is going to be replaced by the German Packaging Law<sup>8</sup>, coming into effect on 1 January 2019.

They are defined for each packaging material as follows (no specific targets for the DRS):

Table 1 : Recycling targets for packaging (material recycling in % of weight)

Material	Packaging Ordinance	Packaging Law 2019	From Jan. 1, 2022
Glass	75%	80%	90%
Paper & Cardboard	70%	85%	90%
Ferrous Metals	70%	80%	90%
Aluminium	60%	80%	90%
Beverage Carton Packaging	60%	75%	80%
Other Composite Packaging	60%	55%	70%
Plastic (Material Recycling)	36%  (60% recovery, hereof 60% recycling >> 36% mechanical recycling)	58.5%  (90% recovery, hereof 65% recycling >> 58.5% mechanical recycling)	63%  (90% recovery, hereof 70% recycling >> 63% mechanical recycling)

## SYSTEM FUNCTIONING, ROLES, AND RESPONSIBILITIES OF MAIN STAKEHOLDERS<sup>9</sup>

### Deposit operator



Deutsche Pfandsystem GmbH (DPG) was established in 2005 in order to practically implement and organise the legally prescribed obligation of the DRS for one-way beverage containers in Germany. This involves, in particular, the operation of a central database for deposit clearing and the management of the marking standards related to the deposit label: DPG security mark and a barcode identification number (GTIN). However, DPG does not play the role of a central management and clearing organisation that undertakes among other tasks the settlements of the deposits for the companies involved. Instead,

<sup>7</sup> Ordinance VerpackV – Verordnung über die Vermeidung und Verwertung von Verpackungsabfällen (Verpackungsverordnung – VerpackV) (Ordinance on the prevention and recovery of packaging waste (Packaging Ordinance – VerpackV)). 1998 [[ordinance](#)], Annex I

<sup>8</sup> Verpackg – Information Platform for Manufacturers and Distributors Regarding the Packaging Law and Packaging Ordinance [[website](#)]

<sup>9</sup> DPG – Die Funktionsweise des Pfandsystems (The functioning of the deposit system) [[website](#)]

it provides the participating companies a framework within they can undertake the settlements between themselves.

DPG is a non-for-profit company whose shareholders are the German Retail Federation (50%) and the Federation of German Food and Drink Industries (50%). DPG financing comes through membership fees. Every member of the DPG has to pay a small annual fee, depending on the size of its operations.

In the context of the deposit clearing process, the requirements placed by DPG on producers and retailers are extensive and require appropriate technical know-how and personnel, as well as the necessary software and hardware capacity for processing of the sometimes very large quantities of data. This is why producers and retailers can commission the technical management of the clearing processing to specialised service providers<sup>10</sup> (who have concluded a licensing agreement with DPG).

The unredeemed deposits stay with the producers and the retailers own the collected material, which they can sell to the recycling industry.

### Producers

The producer, who decides to market drinks in one-way packaging subject to a deposit, must fulfil the following obligations:

- Charge a deposit of at least 0.25 EUR for each one-way drinks packaging
- Ensure the packaging is clearly identifiable as being subject to a compulsory deposit via specific marking/ labelling
- Take part in a nation-wide deposit scheme that allows the members of the scheme to manage the deposit return claims among themselves.

By registering with the DPG system, they can fulfil these obligations. This happens through a contract between DPG and the producer which is called “first distributor” in the DPG system. Once the contract is concluded, the producer needs to identify the packaging with a barcode and DPG-label; and enter the relevant information into the DPG database. The producer receives the deposits for its packages from retailers and keeps them in order to repay the retailers later, once the containers were taken back. A deposit account service provider, approved by the DPG, can assist in the invoicing and clearing procedure.

### Retailers<sup>11</sup>

Each retailer who purchases drinks subject to a deposit from a “first distributor” must pay a deposit for the drinks packaging, in addition to the purchase price. When it resells the drinks, it levies a deposit from the consumer. The retailer refunds the deposit to consumers on acceptance of returned packaging. All returned packaging units are registered electronically, either through RVMs at point of collection or through industrial RVMs at central processing and counting depots.

The retailer takes back the one-way packaging and afterwards makes a deposit-refund claim to the “first distributor” based on the data recorded. The retailer can determine to which “first distributor” he must address his claim by reading the barcode of each container and comparing it to the data in the DPG system. The “first distributor” will then refund the data previously levied when selling the drinks.

---

<sup>10</sup> DPG – Service Providers [[website](#)]

<sup>11</sup> DPG – Tasks and obligations [[website](#)]

Since 2006, retailers and other final distributors of drinks concerned by compulsory deposit are obliged to take back one-way beverage packages which are subject to a deposit, but only packages of the same type of materials as those in their own range, independent if the packaging in question was sold by them or by another retailer. This means that a retailer that only sells PET one-way bottles is not obliged to take back aluminium cans or glass bottles, but is obliged to accept all PET bottles independent of their size, shape or brand.

An exception to this obligation is valid for small shops with a surface area of below 200m<sup>2</sup>. They are allowed to only accept packaging similar to their own product offer (brand limitation).

The retailers and shops have two options about how to accept the empty packages from consumers: via RVMs or manually. In the first case, the collector purchases a DPG certified collection machine and places it in its sales rooms. Before being put into operation, the machine is entered in the DPG system database and is linked to the specific collector. When empty containers are put into the RVM, the machine checks the validity of the DPG marking and recognises the packaging on the basis of the printed article number (GTIN). For each packaging recognised as valid a so-called electronic raw data set is prepared; at the same time the packaging is destroyed (compressed) to prevent any repetition of the return procedure. The packaging is then passed to the recycling. The deposit invoice is automatically carried out on the basis of the electronic dataset.

The purchase of a RVM is not a precondition for participation in the DPG clearing process. There is also the possibility for manual collection in the shop. In this case, the electronic dataset for the deposit invoice is prepared subsequently. After the manual collection, the containers are gathered and brought to authorised counting centres (run by various operators nationwide) for automated recording. Counting centres function in principle just as the RVM: they can recognise DPG packages and prepare an electronic dataset for each packaging needed for the deposit invoice. Also in the Counting Centre deposit packages are first recorded and then compressed and passed on for recycling.

The electronic datasets are used to identify the corresponding producer via the DPG database. Data relating to the same producer are summarised in a “notice of claim” with a corresponding invoice.

### Consumers

Consumers pay a deposit for every beverage in one-way packaging they buy. They can redeem the deposit when they bring it back to a retailer. They can only get a deposit back for packaging which has a DPG-deposit mark on it, thus not for packaging from abroad. There is a different deposit for refillable packaging which is part of a different system than the DPG system.

### Supervision

According to the Packaging Ordinance, the Federal Government shall conduct annual surveys to determine the share of beverages filled in refillable and ecologically advantageous one-way packaging by calculating the sum of beverages sold in reusable packaging and in ecologically advantageous one-way packaging to the overall volume of beverages sold in all packaging.

With the new Packaging Law coming into effect on 1 January 2019, the Government shall continue to conduct annual surveys. Government agreed on an evaluation plan for 2020/21.

# RESULTS

The main argument for introducing the DRS was to keep high share of refillable bottles as these are considered to be more environmentally advantageous. However, starting from levels above 70%, the share of refillables has been steadily declining since the late 1990s, while the share of one-way packaging has been on the rise.

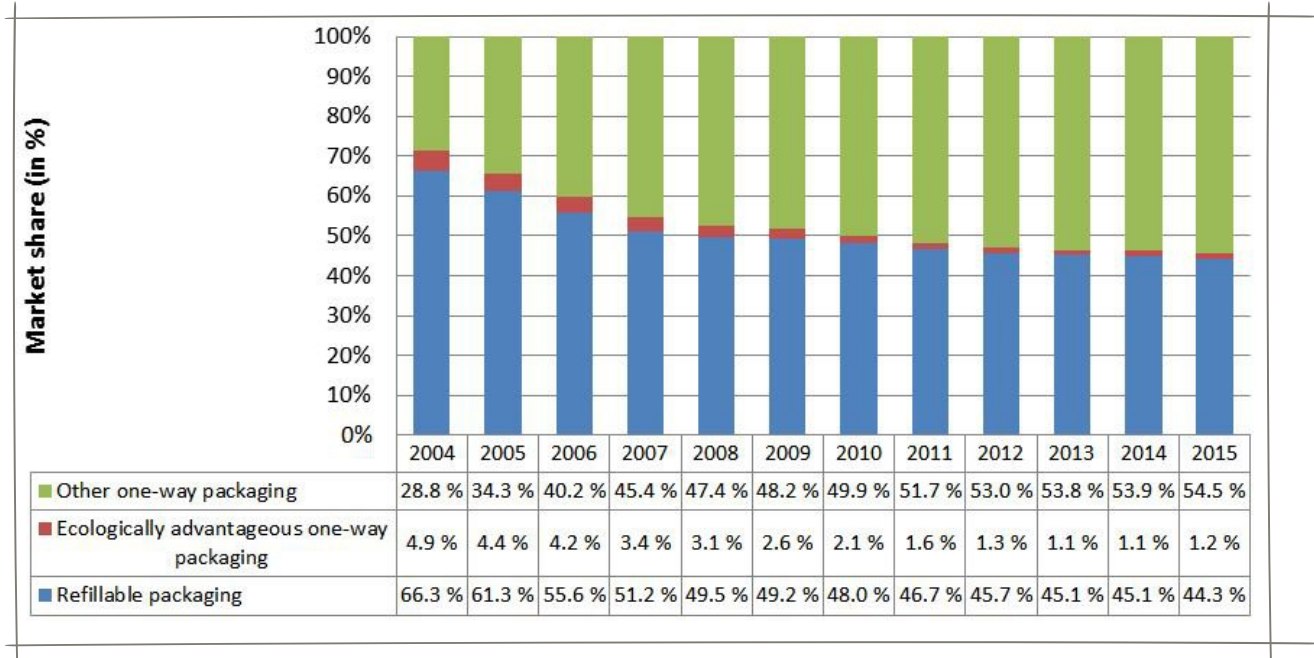


Figure 2: Market share of different packaging categories 2007-2015 (in %). Source: Umweltbundesamt (2017) and BMUB 12 (2017)<sup>13</sup>

Looking at the break-down per types of packaging (Figure 3), it appears that the major market share is held by one-way plastic bottles. The reasons for this could be traced back to the origins of the deposit-refund scheme. When the scheme was first introduced in 2003, the Packaging Ordinance did not require the operational rules for the deposit system to be established by regulation and the government gave producers (manufacturers and retailers) the possibility to introduce a nationwide clearing system until October 2003. As a result of political disagreements and legal uncertainty, this deadline was not met and a series of independent arrangements ensued. The most widespread practice was the so-called individual or “island” solutions where retailers accepted back only those packages which corresponded to their own product range. This was possible as the initial Packaging Ordinance limited the take-back obligation of retailers to empty packaging of the same type, shape, and size; and for the same products as those sold by the retailers. Thereby, retailers operating individual solutions were able to avoid taking back products from competitors and thus did not need to participate in expensive clearing systems. As cans have a generic shape, it was not possible to establish such separation and consequently retailers decided to stop selling cans altogether. The only exemption was a major energy drink producer, which ran its own state-wide clearing system. Individual solutions placed cans at a strong competitive disadvantage against PET. In particular, the discount chains largely resorted to such solutions<sup>14</sup>. Also currently, discounters sell beverages predominantly in one-way plastic bottles with two exemptions of discount retailers featuring refillable bottles in their range<sup>15</sup>.

12 BUMB: Bundesministeriums für Umwelt, Naturschutz, Bau und Reaktorsicherheit

13 Umweltbundesamt – Vergleich der Packmittelgruppen Getränke (Comparison of packaging groups drinks). 2017 [report] Accessed in September 2018; BMUB – Anteile der in Mehrweg-Getränkeverpackungen sowie in ökologisch vorteilhaften Einweg-Getränkeverpackungen abgefüllten Getränke (Shares of beverages bottled in reusable beverage packaging as well as in ecologically advantageous disposable beverage packaging). 2017 [website]

14 Groth, M. – A review of the German mandatory deposit for one-way drinks packaging and drinks packaging taxes in Europe. University of Lüneburg. Working Paper Series in Economics. 87. 2008 [report]

15 Mehrweg – Märkte (Market) [website]

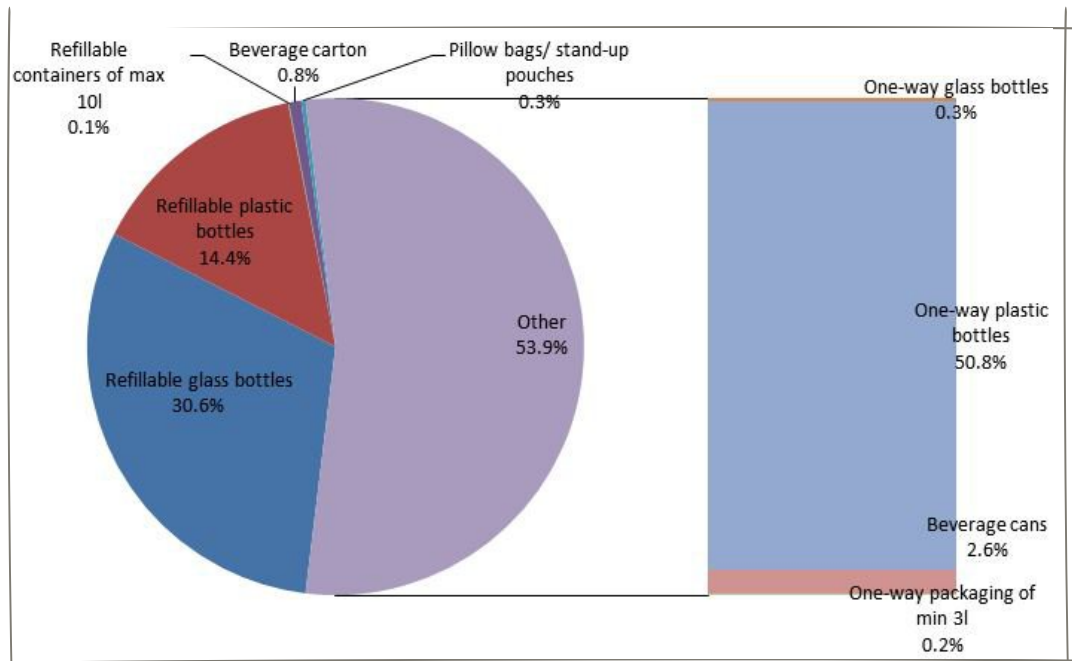


Figure 3: Structure of the different packaging types used for beverage packaging (in % for year 2014). Source: Umweltbundesamt, 2016<sup>16</sup>

According to the latest revision of the Packaging Ordinance, promotion of the refillables will continue to be pursued. The law foresees few concrete steps to raise the share of refillables. This includes that retailers will have to take measures to make more visible to consumers the difference between one-way and refillable bottles, by dedicating separate shelf space for each category and using clear marking. Producers themselves have voluntarily committed to improve the marking of one-way beverage packaging, by including the amount of the deposit as well as mentioning the words “one-way” and “deposit”. Further, the deposit will be expanded to include other drinks which had been exempted so far, such as fizzy fruit juice<sup>17</sup>.

The new Packaging Law coming into effect in 2019, ecologically advantageous one-way packaging will no longer exist. The law will contain a target refillable quota of 70% which is non-binding. In 2020-2021, the refillable situation will be assessed and a decision will be taken on what to do.

With regards to the system results, in 2016, 96% return rate was reported for cans and 98% for plastic bottles<sup>18</sup>. As the system is not managed centrally, there is certain lack of transparency. There are no official statistics about the return rates of the different materials. The overall return rate is assumed to be 98 - 98.5% based on information communicated by DPG and other industry players.

Collection points (retailers) own the material and can decide what to do with it: to organise the recycling themselves or to sell it to recycling market. One retail chain in particular uses recycled PET from collected bottles to replace virgin material for own retail-branded packaging<sup>19</sup>.

<sup>16</sup> Umweltbundesamt – Packmittelstruktur des Getränkeverbrauchs 2014 (Packaging structure of beverage consumption 2014). 2016 [[report](#)]

<sup>17</sup> BMUB – Mehrweg und Verpackungsgesetz: Häufig gestellte Fragen (Reusable packaging and packaging law: Frequently asked questions) [[website](#)]; BMUB – Pfandflasche = Mehrwegflasche??? (Returnable bottle (deposit) = returnable bottle (reuse) ???). 2016 [[website](#)]; BGBl. I 2017 S. 2234 – Gesetz zur Fortentwicklung der haushaltsnahen Getrennterfassung von wertstoffhaltigen Abfällen (Law on the development of household separate collection of recyclable waste). 2017 [[website](#)]

<sup>18</sup> SUEZ – How a deposit return scheme for ‘on the go’ could be designed for the UK. 2018. p. 1 [[report](#)]

<sup>19</sup> Lidl – Jede Flasche zählt (Every bottle counts) [[website](#)]



## REFERENCES

- BGBl. I 2017 S. 2234 – Gesetz zur Fortentwicklung der haushaltsnahen Getrennterfassung von wertstoffhaltigen Abfällen (Law on the development of household separate collection of recyclable waste). 2017 [[https://dejure.org/BGBl/2017/BGBl.\\_I\\_S.\\_2234](https://dejure.org/BGBl/2017/BGBl._I_S._2234)] Accessed in December 2018
- BMUB – Anteile der in Mehrweg-Getränkeverpackungen sowie in ökologisch vorteilhaften Einweg-Getränkeverpackungen abgefüllten Getränke (Shares of beverages bottled in reusable beverage packaging as well as in ecologically advantageous disposable beverage packaging). 2017 [<https://www.bmu.de/themen/wasser-abfall-boden/abfallwirtschaft/statistiken/verpackungsabfaelle/anteile-der-in-mehrweg-getraenkeverpackungen-sowie-in-oekologisch-vorteilhaften-einweg-getraenkeverpackungen-abgefueellten-getraenke/>] Accessed in December 2018
- BMUB – Fragen und Antworten zur Pfandpflicht. (Questions and answers about the compulsory deposit). 2014. [[http://www.bmub.bund.de/fileadmin/Daten\\_BMU/Download\\_PDF/Abfallwirtschaft/pfandpflicht\\_faq\\_d\\_e\\_bf.pdf](http://www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Abfallwirtschaft/pfandpflicht_faq_d_e_bf.pdf)]
- BMUB – Mehrweg und Verpackungsgesetz: Häufig gestellte Fragen (Reusable packaging and packaging law: Frequently asked questions) [<https://www.bmu.de/faqs/mehrweg-und-verpackungsgesetz/>] Accessed in December 2018
- BMUB – Pfandflasche = Mehrwegflasche??? (Deposit bottle = reusable bottle???). 2016 [<https://www.bmu.de/themen/wasser-abfall-boden/abfallwirtschaft/abfallarten-abfallstroeme/verpackungsabfaelle/pfandflasche-mehrwegflasche/>] Accessed in December 2018
- Deutsche Umwelthilfe – Hintergrundpapier: Informationen zum umweltfreundlichen deutschen Mehrwegsystem (Background paper: Information on the environmentally friendly German reusable system). 2014 [[http://www.duh.de/fileadmin/user\\_upload/download/Projektinformation/Kreislaufwirtschaft/Mehrweg\\_Hintergrundpapier\\_2015.pdf](http://www.duh.de/fileadmin/user_upload/download/Projektinformation/Kreislaufwirtschaft/Mehrweg_Hintergrundpapier_2015.pdf)]
- DPG – Die Funktionsweise des Pfandsystems (The functioning of the deposit system) [<http://www.dpg-pfandsystem.de/index.php>] Accessed in December 2018
- DPG – Tasks and obligations [<http://www.dpg-pfandsystem.de/index.php/en/function-of-the-dpg-system/retailers-and-other-final-distributors/tasks-and-obligations.html>] Accessed in December 2018
- DPG – Service Providers [<http://www.dpg-pfandsystem.de/index.php/en/function-of-the-dpg-system/service-provider.html>] Accessed in December 2018
- Groth, M. – A review of the German mandatory deposit for one-way drinks packaging and drinks packaging taxes in Europe. University of Lüneburg. Working Paper Series in Economics. 87. 2008 [<https://core.ac.uk/download/pdf/6781128.pdf>]
- Lidl – Jede Flasche zählt (Every bottle counts) [<https://www.lidl.de/de/jede-flasche-zaehlt/s4125>] Accessed in December 2018
- Mehrweg – Märkte (Market) [<http://www.mehrweg.org/einkaufen/maerkte/>] Accessed in December 2018

Ordinance VerpackV – Verordnung über die Vermeidung und Verwertung von Verpackungsabfällen (Verpackungsverordnung – VerpackV) (Ordinance on the prevention and recovery of packaging waste (Packaging Ordinance – VerpackV)). 1998 [[http://www.gesetze-im-internet.de/verpackv\\_1998/VerpackV.pdf](http://www.gesetze-im-internet.de/verpackv_1998/VerpackV.pdf)]

Quoden, J. – Rechtsanwalt Joachim Quoden. Case study Germany. 2012 [not public]

SUEZ – How a deposit return scheme for ‘on the go’ could be designed for the UK. 2018. p. 1 [<http://www.sita.co.uk/wp-content/uploads/2018/03/DRS-OnTheGo-Report-UK-1803.pdf>]

Umweltbundesamt – Packmittelstruktur des Getränkeverbrauchs 2014 (Packaging structure of beverage consumption 2014). 2016 [[https://www.umweltbundesamt.de/sites/default/files/medien/384/bilder/dateien/10\\_abb\\_packmittelstruktur-getraenke\\_2017-10-19.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/384/bilder/dateien/10_abb_packmittelstruktur-getraenke_2017-10-19.pdf)] Accessed in September 2018

Umweltbundesamt – Vergleich der Packmittelgruppen Getränke (Comparison of packaging groups drinks). 2017 [[https://www.umweltbundesamt.de/sites/default/files/medien/384/bilder/dateien/9\\_abb\\_packmittelgruppen-getraenke\\_2017-10-19.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/384/bilder/dateien/9_abb_packmittelgruppen-getraenke_2017-10-19.pdf)] Accessed in September 2018

Verpackg – Information Platform for Manufacturers and Distributors Regarding the Packaging Law and Packaging Ordinance [<https://verpackungsgesetz-info.de/en/>] Accessed in December 2018

WMP Consult – Zukunft der Getränkeindustrie – Entwicklung von Markt, Beschäftigung und Arbeitsbedingungen (The future of the beverage industry - development of market, employment and working conditions). 2016 [[https://www.bzo.de/fileadmin/media/infos/downloads/BZO\\_wmp\\_Studie\\_Getraenkeindustrie\\_BZO\\_120916.pdf](https://www.bzo.de/fileadmin/media/infos/downloads/BZO_wmp_Studie_Getraenkeindustrie_BZO_120916.pdf)]

### **Disclaimer**

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

---

## **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).

---