



# How to implement EPR for packaging?

Comparison of different country experiences.



## HOW TO IMPLEMENT EPR FOR PACKAGING? COMPARISON OF DIFFERENT COUNTRY EXPERIENCES.

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## ABBREVIATIONS

ANGed	National Waste Management Agency (Tunisia)
CPCB	Central Pollution Control Board (India)
DRS	Deposit Return System
DSD	Duales System Deutschland (a German Producer Responsibility Organisation)
EPR	Extended Producer Responsibility
EPS	Expanded polystyrene
EU	European Union
MOEFCC	Ministry of Environment, Forest and Climate Change (India)
PIBO	Producers, importers and brand owners
PRO	Producer Responsibility Organisation
CPCB	Central Pollution Control Boards (India)
SPCB	State Pollution Control Boards (India)
VerpackG	Verpackungsgesetz (the German Packaging Act)
VerpackV	Verpackungsverordnung (the German Packaging Ordinance)



# 1 INTRODUCTION



## 1.1 Objective of this report

The „Rethinking Plastics – Circular Economy Solutions to Marine Litter“ project, funded by the EU and the German government, facilitates the transition towards circular economy in East and Southeast Asia. Since 2019, practitioners in China, Indonesia, the Philippines, Thailand, and Vietnam have been exchanging under the project’s initiative on extended producer responsibility (EPR) for packaging. Governments, municipalities, producers, recyclers, and civil society shared experiences, challenges, as well as recommendations, and international experts contributed technical and regulatory advice and best practice examples from Europe.

This report, showing how EPR for packaging has been implemented in Germany, Tunisia and India, has been written within the “Rethinking Plastics” project. Aside from providing a comparison of country experiences,

the objective of the report is to provide guidance on how to effectively implement EPR to decision-makers in countries that are only at the beginning of legislative changes.

## 1.2. What is EPR

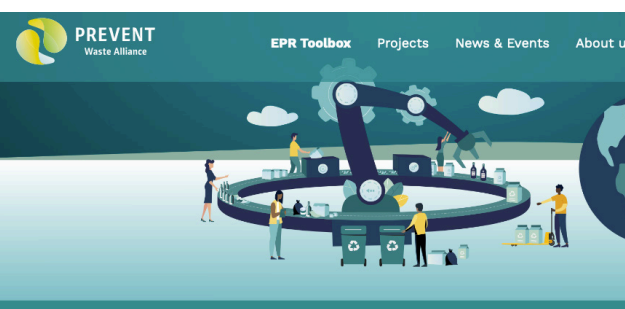
The concept of EPR bases on the “polluter-pays” principle<sup>1</sup>, according to which producers should be held responsible for products they place on the market throughout their whole lifecycle.

This includes not only sales and the provision of warranties but also producer obligations such as take-back systems, recycling and a sustainable final disposal of their end-of-life products. The concept was developed by Prof. Thomas Lindqvist<sup>2</sup> (Lund University, Sweden) and put into practice in Germany in 1991 via the Packaging Ordinance *VerpackV*. EPR was seen in Germany as a remedy to increasing packaging volumes, limited landfill space and increasing waste collection fees for citizens.

Over the last 30 years EPR has gradually spread into other countries and products, covering not only packaging but also products such as electronic and electrical equipment, batteries, furniture, tires, oil, paper, recreational boats, agricultural plastics, construction and demolition waste and vehicles. The set of streams covered with EPR is not finite: for instance, in the European Union, EPR schemes for textiles, single-use plastics and fishing gear containing plastics must be established by the end of 2024.

### EPR Toolbox translations

The Rethinking Plastics project translated the toolbox into [► Bahasa Indonesia](#), [► Chinese](#), [► Thai](#), [► Vietnamese](#).



The popularity of EPR as a policy approach is growing because, when implemented and enforced successfully, EPR tackles not only the symptoms but also the root causes of waste pollution, securing finance for investments in infrastructure, separate collection, transport and recycling of waste. It can be considered a key instrument to build a circular economy with highly qualified jobs and revenues for a wide range of environmental stakeholders.

For more information around EPR and its main components, please consult the [► EPR Toolbox](#) of the PREVENT Waste Alliance, a platform for exchange and international cooperation on circular economy.

1 Extended Producer Responsibility in the OECD area – Phase 1 Report (1996), [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=ocde/gd\(96\)48](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en&cote=ocde/gd(96)48)

2 Thomas Lindqvist & Karl Lidgren, “Modeller för förlängt producentansvar” (1990)

### 1.3. Country selection

For this study the following three countries from three different continents have been selected to present a diverse range of approaches to establish EPR: Germany, India and Tunisia.

Germany, an EU Member State, has the longest history of EPR for packaging. As such, the country allows to study the achieved collection and recycling results as well as changes and improvements in the system. It is also one of the first countries to have introduced deposit return systems (DRS) for certain single-use plastic and metal beverage containers. This has contributed to better recycling with high recycling rates and enabled the use of resulting recyclates in food-contact applications due to the fact that beverage packaging is collected through a separate infrastructure.

#### Germany has the longest history of EPR for packaging

and is one of the first countries to have introduced deposit return systems (DRS) for certain single-use plastic



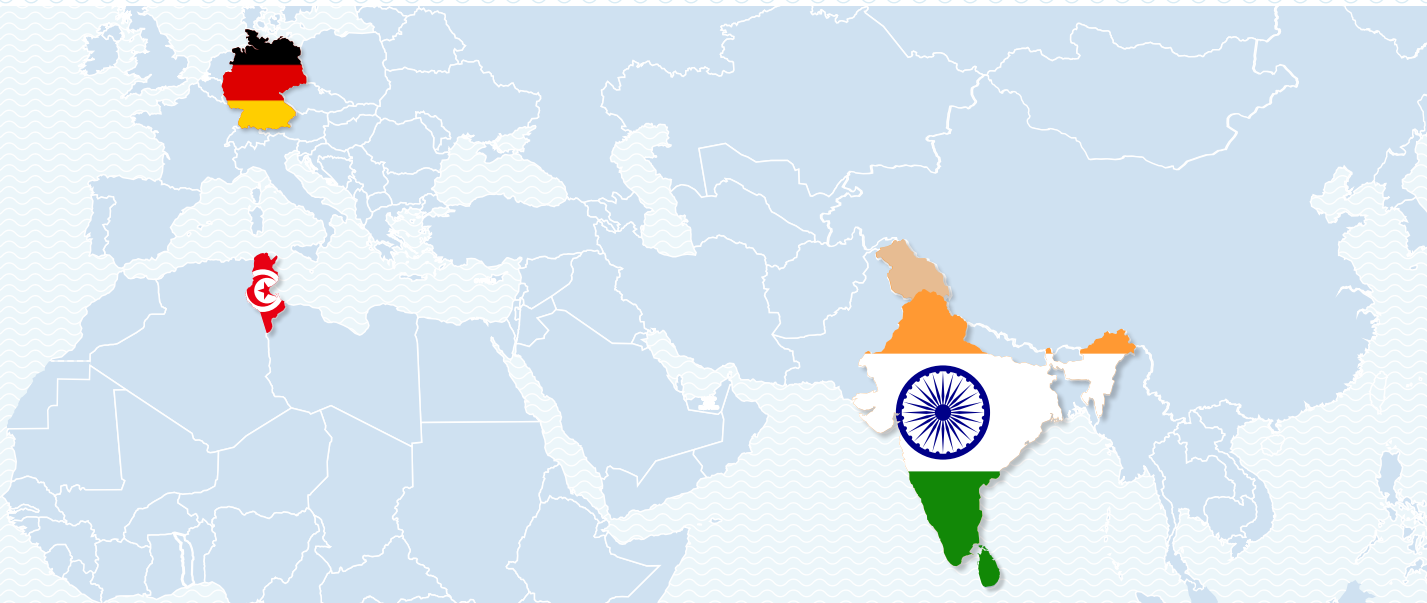
India has been selected for the study because it introduced plastic waste management rules already in 2016. The legislation imposing mandatory EPR for plastics got updated in 2022 and the new regulatory package includes precise definitions as well as reuse and minimum recycled content requirements.

The third country, Tunisia, can boast with a very long EPR history and inclusive management of the informal sector. Over the past 20 years, however, there have been several issues slowing down the effective enforcement of EPR, including political developments and a lack of public support.





## 2 IMPLEMENTING AND ADAPTING LEGAL FRAMEWORKS FOR EPR



### 2.1. Germany

#### 2.1.1 Introducing mandatory EPR: VerpackV, 1991– 2018

The German packaging regulations were first implemented as a mandatory EPR system in December 1991. This created a take-back obligation for producers on various types of packaging:

- Sales packaging
- Repackaging material, used for grouping of products
- Transport packaging

Initial targets, presented in the table next page, were subsequently increased.

In order to fulfil the obligations of the producers and retailers to take-back sales packaging from consumers, a producer responsibility organisation (PRO) was established, the Duales System Deutschland (DSD), also called the “Green Dot”. The fees paid by producers, initially established per package according to its size (regardless of the material), soon evolved into a fee per kilo of the specific material, glass being the cheapest and plastics the most expensive.

**Table 1**

Collection, sorting/recycling targets and recycling quotas imposed in Germany by VerpackV in 1991

Source: Landbell AG

Packaging Material	Collection target	Sorting /recycling target	Recycling quota <sup>3</sup>
Glass	60%	70%	42%
Tinplate	40%	65%	26%
Aluminium	30%	60%	18%
Paper and carton	30%	60%	18%
Plastics	30%	30%	9%
Composite materials	20%	30%	6%

Additionally, to ensure that the packaging collected and sorted would eventually be recycled, specific organisations were identified (and in some cases created) as guarantor. They committed to take over the sorted waste fractions and recycle them at no extra cost. There was one entity for plastic packaging, one for beverage cartons, one for aluminium packaging and one for glass packaging, while ferrous metal packaging was sent to steelworks. While they contributed to the ramp up of a recycling industry in the early stage, the role of these entities was drastically reduced and replaced by a more competitive environment of service providers at the urge of the German Competition Authority.

During the first 10 years of the scheme, collection performance increased, and rules were adjusted from time to time to address specific issues. For instance, the collection target was replaced in 1998 by a recovery quota, calculated over the quantities introduced on the market by participating producers:

**Table 2**

Recovery quotas introduced in Germany in 1998. Source: VerpackV, August 1998

Packaging Material	Recovery quota
Glass	75%
Tinplate	70%
Aluminium	60%
Paper and carton	70%
Plastics	60%

<sup>3</sup> Recycling quota = Sorting/recycling target x Collection target

### The development of recycling industry in a competitive environment of service providers



Additional requirement on plastics imposed that at 60% of the recovery would be performed as material recycling<sup>4</sup>.

In addition, in order to reduce free riding<sup>5</sup>, producers opting for an individual system instead of joining the PRO were asked to have their individual recovery quota verified.

A deposit system was also introduced in 2003, for one-way beverages.

The same year saw also the end of the DSD monopoly in favour of competition between multiple PROs, as requested by the German Competition Authority. This led to a significant decrease in costs with no negative side effect on recovery and recycling. Currently eleven PROs serve the German packaging compliance market.

#### 2.1.2 The new German Packaging Act: VerpackG, 2019 – 2022 and beyond

In 2019, a new law was enforced in Germany with yet new requirements aiming at achieving more ambitious results while fixing some of the issues of the former system, particularly in relation to free riders and a level playing field among PROs.

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<sup>4</sup> So, with a recovery quota for plastics at 60%, 36% of the material put on the market had to be recycled

<sup>5</sup> Free riders are companies who enjoy the market opportunity without fulfilling their regulatory obligations in relation to EPR or lessening their obligations by under-declaring their volume placed on the market.

The new German Packaging Act (VerpackG) pursues 3 goals:

- Clear increase of recycling targets
- Prevention of packaging waste
- Fairness between market participants

#### 2.1.2.1 Counteracting free riders – obligation to register

In order to reduce free-riding and ensure a level playing field, the new Act introduced the following additional requirements for producers:

- to join a compliance scheme (PRO) or a “branch solution” (i.e. another collective solution as individual compliance is not accepted anymore)
- to register with the new packaging authority “Central Agency” (Zentrale Stelle Verpackungsregister at [▶ https://www.verpackungsregister.org](https://www.verpackungsregister.org)) before placing any packaged goods on the German market
- to report the amount and type of packaging materials they put on the German market to the Central Agency and to their PRO and
- in specific cases to submit a Declaration of Completeness to the Central Agency.

#### 2.1.2.2 New recycling targets

Since the latest regulatory iteration (VerpackG, 2019), the recycling targets were adjusted for all packaging streams and already in 2019 they exceed the proposed EU targets for 2025. For the exact rates please see [▶ Chapter 3.1](#) on, targets and timelines. It is to be noted, that the recycling targets are material recycling targets (e.g. mechanical recycling of plastic to plastic). Other forms of plastic recycling like solvent based or chemical recycling do not count towards the target. Also, energy recovery or use of packaging waste as substitute fuel must not be included in the counting. Moreover, any treatment must follow the waste hierarchy and all obligations of the German Circular Economy Act (KrWG) setting treatment standards as well as permit requirements for treatment facilities.

#### 2.1.2.3 Obligated companies

According to the German law, obliged companies are producers and all other economic operators who place packaged products as the first distributor on the German market – even if based abroad.

Since there are no minimum limits, everyone who commercially puts packaging into Germany for the first time is affected by the new Act and has to comply with the regulations.



In case of export of products to Germany, the company, which is responsible for the packaged goods by crossing the German borders, has to comply with the German packaging obligations (transfer of risks).

The obligation also covers distant sellers (e.g. web shops) that sell packaged goods from any other country to Germany.

Since 1 July 2022 online marketplaces are obliged to check the compliance of their sellers. Sellers need to demonstrate their registration in the central register and their contract with a PRO. If they can't demonstrate this to the marketplace, the marketplace must block the sales for that seller. This shall assure a level playing field among stationary and online sales.

This new obligation for marketplaces as well as the public register introduced in 2019 have led to a significant increase of registered producers in the German system from below 100.000 to approx. 420.000 producers (status as of 20 June 2022).

#### 2.1.2.4 Packaging in scope

Packaging that requires a legal contract with a PRO or the setup of an also strictly regulated “branch solution” is defined as packaging filled with goods that, after use, typically remains at the private end consumer<sup>6</sup> as waste. This is namely:

- **Sales packaging** – packaging that is used to protect goods and products and ensures their safe handover to the consumer. The term sales packaging describes packaging that is offered as a consumer sales unit and is sold to private end consumers
- **Service packaging** – packaging that is used at the point of sale to hand over goods to consumers (e.g. a bread bag at the bakery, the paper wrapped around fresh meat at the butcher, fruit or vegetable bags, coffee-to-go cups, pizza boxes, etc.)
- **Delivery packaging** – packaging that, in case of catalogue/web sales, is used to deliver goods to consumers (e.g. the shipping cartons, filler materials like bubble foil, etc.).

Those materials are solely handled by PROs (vast majority) or branch solutions (minor volumes).

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<sup>6</sup> Private end consumers are private households and sources of waste generation equivalent to these, e.g. restaurants, hotels, canteens, administrative offices, hospitals, etc. (further examples are listed in § 3 (11) VerpackG). Comparable places of origination also include small and medium-sized companies that dispose of their waste (paper, board, cartons, glass, and lightweight packages) using collection containers of a typical household size (1,100 l).

Out of scope for the handling by PROs or branch solutions are the following:

- Reusable packaging
- Transport packaging, which is typically not for handing the product over to the private end consumer, also for the "handling" of goods (storage at distributors or retailers)
- Packaging of hazardous goods (as listed in the Act)
- Packaging subject to PRO participation that is demonstrably not supplied to the end consumer
- Single-use packaging of beverages covered by the DRS.

Those materials need to be taken back by producers according to the VerpackG but are handled in different infrastructures outside the PROs.

### 2.1.3 Management of the system

Over its 30+ years of EPR history, Germany has regularly amended its packaging regulation to make it more ambitious, clearer and more difficult to escape.

The core of EPR lies with the producers. Their responsibility encompasses registration, reporting, declaring completeness and joining a PRO. The latter requirement, i.e. mandatory membership in a waste packaging PRO, is unique when compared to other countries. The theoretically available alternative to set up a branch solution got less attractive as it faces similar requirements as the setup of a PRO and is typically not more efficient.

Collection and recycling of packaging waste in scope (see ► [chapter 2.1.2.4](#)) is organised by the PROs, who are contracting any necessary third party to perform these tasks such as collection and proper treatment or recycling and achieve compliance.

PROs need to document all volumes as well as how and where they have been treated. Treatment includes all possible ways such as preparation for reuse, recycling, energy recovery and use as substitute fuel.

PROs have the mission to fulfil the recycling targets on behalf of the producers who joined them, and for this matter contract with collection companies (which could also be municipalities), sorting centres and recyclers.

Moreover, PROs are required to closely work with municipalities to align services. They must also finance the cleaning of municipal collection points (mainly for paper and glass) as well as the municipal waste related communication to consumers. The paper collection is also often organized jointly, while PROs take responsibility for packaging paper and municipalities for other paper such as graphical paper, i.e. newspapers, catalogues, letters, office paper (any paper that is not considered packaging).

On top of the communication by municipalities, PROs also need to run jointly financed nation-wide awareness raising campaigns to consumers to increase collected volumes and improve the quality of packaging waste separation by consumers.

The registry function is fulfilled by an independent foundation, the above mentioned Central Agency Packaging Register (Zentrale Stelle Verpackungsregister), introduced in 2019. The Central Agency is the supervisor of the EPR system.

### Close collaboration between PROs and municipalities

The paper collection is often organized jointly





## 2.2. India

### 2.2.1 Plastic Waste (Management and Handling) Rules, 2011

Under the Plastic Waste (Management and Handling) Rules introduced in 2011, the responsibility lied with the municipal authorities to set up, operationalize and co-ordinate the waste management system and to ensure safe collection, storage, segregation, transportation, processing and disposal of plastic waste. Additionally, municipal authorities had to ensure that no damage was caused to the environment, ensure setting-up of collection centres and waste channelisation to recyclers. They were also in charge of raising stakeholders' awareness, engaging agencies or groups working in waste management, including waste pickers and preventing open burning of plastic waste.

EPR was only optional. It was introduced as a possibility for municipal authorities to ask manufacturers (i.e. of plastic or user of plastic for packaging) to contribute financially to the establishment of plastic waste collection centres. Hence, the producer responsibility was limited to providing funds, if requested, for the establishment of collection infrastructure, excluding responsibility for sorting, transporting or processing of the waste.

The product scope was limited to flexible or multi-layered plastics and, in particular, plastic bags and pouches, whereas registration requirements with the Central Pollution Control Board (CPCB) were limited to plastic manufacturers of plastic bags or multi-layered plastics and to recyclers. No collection or recycling targets were set.

### 2.2.2 Plastic Waste Management Rules, 2016

In 2016, a new set of rules was released, superseding the 2011 legislation, with

the aim "to implement these [2011] rules more effectively and to give thrust on plastic waste minimization, source segregation, recycling, involving waste pickers, recyclers and waste processors in [the] collection of plastic waste fractions either from households or any other source of its generation or intermediate material recovery facility and adopt the polluters pay principle".





### 2.2.2.1 Obligated companies

The 2016 rules introduced the definitions of a **Brand Owner**, as a person or company who sells any commodity under a registered brand label, of an **Importer**, a person who imports or intends to import and holds an **Importer – Exporter Code number**; and restricted the definition of a **Manufacturer** to those persons actually engaged in the manufacturing of plastic raw materials. It also introduced the definition of a **Producer**, as a person engaged in manufacturing or importing carrier bags, multi-layered packaging, plastic sheets or like, including industries and individuals using plastic sheets, covers made of plastic sheets or multi-layered material for packaging or wrapping the commodity. Collectively, producers, importers and brand owners were referred to as **PIBOs**. Finally, the 2016 rules also introduced the definition of a **Waste Generator**, as every person or group of persons or institution, residential and commercial establishments including Indian Railways, Airport, Port and Harbour and Defense establishments, which generate plastic waste.

### 2.2.2.2 Allocation of responsibilities

The **PIBOs** who introduce the products in the market were given the primary responsibility for collection of used multi-layered plastic sachets, pouches and packaging. They were requested to establish a system for collecting back the plastic waste generated due to their products and submit a plan to relevant authorities to that effect. **PIBOs** as well as recyclers were required to register with the State Pollution Control Board (SPCB) or Pollution Control Committee concerned, as the case may be.

The responsibilities of the municipal authorities (below referred to as local bodies) were not fundamentally changed, apart from those two notable amendments:

- Local bodies were invited to encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction energy recovery or waste to oil processing, thanks to which waste recovery became an additional option next to recycling and disposal.
- The local bodies had to seek assistance of producers for setting up a system for plastic waste management, thus not restricting the producer responsibility to setting up collection centres only.

Waste generators were given responsibility for waste minimization and waste segregation.



### 2.2.2.3 Other requirements

Marking requirements were introduced, making it illegal to place on the market unmarked carrier bags or plastic sheets. This obligation also fell upon retailers and street vendors, who had to register with local bodies and had to dispense the bag to consumers at a cost.

Finally, as with the 2011 rules, the product scope was limited to flexible or multi-layered plastics and in particular, plastic bags and pouches.

Similarly, there were no collection or recycling nor recovery targets set up.

## 2.2.3 Plastic Waste Management (Amendment) Rules, 2022

The Plastic Waste Management (Amendment) Rules came into force on 16 February 2022. Whilst not superseding the 2016 rules, they are introducing drastic changes to these.

### Recycling

is understood as the process of transforming segregated plastic waste into a new product or raw material for producing new products



The most notable changes are the enlargement of the product scope: in addition to flexible and multilayer packaging (mono or multi material as long as it contains some plastic) and plastic sheets, the 2022 rules also set targets for rigid plastic packaging. Another change is the introduction of time-bound collection targets, recycling, reuse and minimum recycled content requirements.

To read more about the targets please refer to [chapter 3.2 Targets and timelines](#).

### 2.2.3.1 New definitions

The updated rules introduced new definitions. **Recycling** is understood as the process of transforming segregated plastic waste into a new product or raw material for producing new products, while **Reuse** is defined as using an object or resource material again for either the same purpose or another purpose without changing the object's structure. In other terms, using a rigid container more than once by refilling it (the reuse target only applies to rigid plastic packaging).



## 2.2.4 Management of the system

The main difference to the German system is that producers, according to the regulation in India, are the only entities responsible to fulfil the obligations set forth for PIBO in the regulations.

They can contract PROs and agencies to fulfil their operational duties but they remain liable from the perspective of the authorities, i.e. there is no transfer of liability from the point of view of the regulator.

Producers are financially responsible for the collection and processing of the waste, but urban local bodies have competences for the establishment of waste collection systems in their territory, as well as the development of awareness.

### **Producers are the only entities responsible to fulfil the obligations**

They can contract PROs and agencies to fulfil their operational duties



There is no obligation for producers to collaborate with PROs, and as a matter of fact the rules do not mention PROs. This is a deliberate move of the Ministry of Environment, Forest and Climate Change (MOEFCC) to make producers fully responsible for achieving EPR targets. Producers are free to secure collection and recycling arrangements on their own, or to contract a PRO or a similar agency for that purpose. Due to the nature of the targets to be achieved and the sheer size of the country, it is expected that most producers will contract several PROs or other service providers (like urban local bodies, plastic waste processors, etc.) to ensure compliance for the foreseeable future. While there is no legal definition of PRO in the regulations, the role exists nevertheless, and services providers tag themselves PRO.



## 2.3 Tunisia

### 2.3.1 Law 96-41 of 1996 waste management rules, 2016

In Tunisia, the Law 96-41 of 10 June 1996 already introduced key principles in relation to waste management, such as:

- Waste prevention and reduction at manufacturing and distribution levels
- Recycling and recovery of waste
- Limited access of controlled landfill for waste types that cannot be further recovered.

### 2.3.2 Decree 97-1102 and Decree 2001-843

EPR-like requirements first appeared in 1997 in the Decree 97-1102 for packaging bags and household packaging, which was later modified by Decree 2001-843 of 10 April 2001 and is still in effect today.

Following the polluter pays principle, producers in Tunisia have three possibilities for take-back and recovery of packaging waste:

- Perform themselves the take-back and management of waste packaging arising out of the products they place on the market
- Appoint such tasks to companies duly licenced by the National Waste Management Agency (ANGed)
- Join the public waste management system ECOLEF established and run by ANGed since 2001.

No collection and recycling targets were set.

#### 2.3.2.1. Management of the system

As it is publicly managed and mostly funded via an import tax on raw materials rather than directly by producers, brand owners typically are not responsible and the system in Tunisia is not a standard EPR system as often seen in Europe.





There is no PRO in Tunisia and the responsibility for collection, including the maintenance of waste packaging receiving centres (for plastics and metal), lies with ANGED, which operates a public service for waste packaging management. This may change in the future, as ANGED is currently evaluating how to best manage various waste streams under EPR, with possibly more operational involvement of the private sector.

### Receiving centres became officially part of the ECOLEF network

In 2009, 30 micro businesses had been established. They are a revenue safety net for the collectors.



The ECOLEF system has been designed with the informal sector inclusion in mind, for instance by inviting members of the informal community to create “micro enterprises”, like opening and operating receiving centres that became officially part of the ECOLEF network and by paying informal collectors that bring waste to these centres. In 2009, 30 such micro businesses had been established. The official receiving centres actually work more like a revenue safety net for the collectors, as they would hand over the waste to higher bidders when the market is exceeding the ECOLEF prices.

ECOLEF is in charge of the following waste packaging categories:

- Plastic packaging (bags, bottles (PET, PEHD), pots (PS), films)
- Partly plastic packaging (beverage cartons)
- Metal packaging (steel food cans, aluminium beverage cans).

Worth noting is the absence of cardboard, glass and wood packaging from the scope.

ECOLEF runs 3 different types of collection models:

- Paid collection, via micro-enterprises
- Voluntary collection, via containers installed in the public space
- Collection campaigns in coordination with municipalities and NGOs.

The system is funded by

- a tax raised on plastic granules imports (at a rate of 5%) for plastic packaging
- direct contribution of producers to ECOLEF for metal packaging.



## 3 TARGETS AND TIMELINES



### 3.1 Germany

The evolution of recycling targets in Germany started much sooner and was more dynamic than in the whole EU. The table below presents the recycling targets in Germany applicable from 1998 to 2025:

**Table 3**

Evolution of recycling targets for packaging imposed in Germany between 1998-2022 and the EU targets for 2025 – 2030

Source: Landbell AG

Material	EU		Germany		
	2025	2030	Verpack V (1998)	Verpack G (2019)	Verpack G (2022)
All packaging	65%	70%			
Plastics	50%	55%	36%	58,5%	63%
Ferrous metals	70%	80%	70%	80%	90%
Aluminium	50%	60%	60%	80%	90%
Glass	70%	75%	75%	80%	90%
Paper & cardboard	75%	85%	70%	85%	90%



### 3.2 India

PIBOs have to achieve differentiated targets depending on the plastic packaging category. To give an example, the targets for brand owners are the following:

**Table 4**

Targets for a brand owner in India. Source: Landbell-GFS India PVT LTD<sup>7</sup>

EPR target Q3

=

Packaging material introduced in market (A)

+

Pre-consumer plastic packaging waste (B)

-

Quantity of reuse (only for category I)

**a) EPR target (% of Q3)**

Year	EPR target (category and state wise)
I 2021-22	25%
II 2022-23	70%
III 2023-24 ->	100%

**b) Minimum level for reuse for category I**

Category I	2025-26	2026-27	2027-28	2028-29 ->
0.9 to 4.9 litre	10	15	20	25
4.9 litre +	70	75	80	85

**c) Minimum level for recycling (% of a))**

Category	2024-25	2025-26	2026-27	2027-28 ->
Category I	50	60	70	80
Category II	30	40	50	60
Category III	30	40	50	60
Category IV	50	60	70	80

**d) End of life disposal = (a) - (c)**

**e) Obligation for use of recycled content (% of (A))**

Category	2025-26	2026-27	2027-28	2028-29 ->
Category I	30	40	50	60
Category II	10	10	20	20
Category III	5	5	10	10

**Legend**

- a) I, II, III are collection targets for each year ("EPR target")
- b) L = Litre (content of the container)
- c) I = Rigid  
II = Flexible (can be multi-layered but only plastic)  
III = Multi-layered and multi-material  
IV = Plastic sheets and carry bags
- d) N/A
- e) I = Rigid  
II = Flexible (can be multi-layered but only plastic)  
III = Multi-layered and multi-material

<sup>7</sup> EPR Target = Collection target, Q1 = Producer, Q2 = Importer, Q3 = Brand Owner





PIBOs have to fulfil their obligations in all states where they sell products (although there is no proportionality requirement, i.e. no obligation to collect exactly volume proportional to market share in each state).

Under-fulfilment of obligation is liable to the payment of an environmental compensation to the CPCB by the PIBOs, which might be partially reimbursed in case of later fulfilment. The funds collected must be utilized for collection, recycling, and end-of-life disposal of uncollected and non-recycled plastic packaging waste, on which the environmental compensation is levied.

PIBOs are encouraged to put in place DRS in order to develop a separate waste stream for collection of plastic packaging waste.

#### **A separate waste stream for collection of plastic packaging waste**

should be developed by DRS, which shall be put in place by PIBOs.



### **3.3. Tunisia**

No targets exist for Tunisia at this stage. This may evolve in the near future.





## 4 ACHIEVEMENTS AND ONGOING DISCUSSIONS



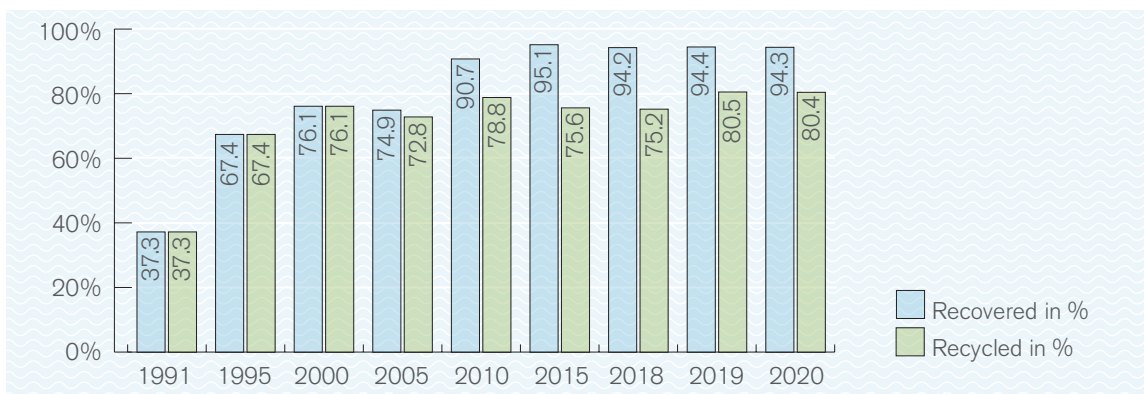
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### 4.1 Germany

In Germany, the overall packaging recycling rate achieved in 2020 was 80.4%, while for plastics only it was 62.9%. The recovery rate achieved by Germany in that year was 94.3%.

**Figure 1**

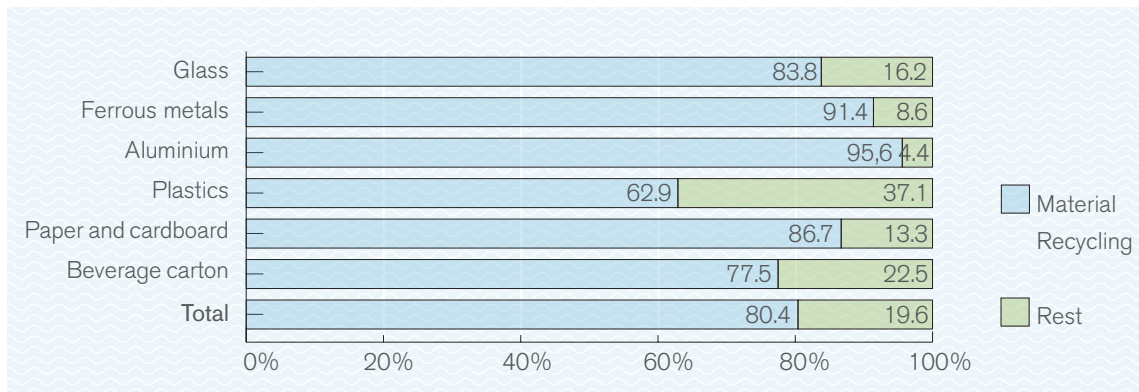
Private packaging recovery and recycling rates in Germany between 1991–2020. Source: <https://gvmonline.de/downloads><sup>8</sup>



<sup>8</sup> National German targets and statistics follow national calculation standards.

**Figure 2**

Achieved recycling rates in Germany in 2020 broken down by packaging category. National German targets and statistics follow national calculation standards. Source: <https://gymonline.de/downloads>



The achieved recovery and recycling results for packaging were possible thanks to EPR implementation. As presented in [Table 5](#), this happened at a minimum cost to consumers – for the majority of analysed products, the EPR fees represent less than 1% of the product sales price:

**Table 5**

EPR fees expressed as percentage of product prices – examples from Germany. Source: Handbook Recycling and Beyond. Black Forest Solutions, 2021

Products	Fill size	Price in Euro	Packaging material	g per pack	Licence price (ct. per kg)	Licence costs (ct. per pack)	Licence price in % of product price
Toothpaste	125ml	1.39	Plastic tube with screw cap	21.8	54	1.18	0.85
Toilet paper	8 roles	2.15	Plastic bags	14.6	54	0.79	0.37
			Cardboard core	4.3	7	0.03	0.01
			<b>Total</b>	<b>18.9</b>		<b>0.82</b>	<b>0.38</b>
Handkerchiefs	30 packets	2.75	Plastic bags	8.4	54	0.45	0.16
			Plastic bags	0.6	54	0.03	0.01
			<b>Total</b>	<b>9.0</b>		<b>0.48</b>	<b>0.17</b>
Grated cheese	200g	1.89	Plastic bags	5.9	54	0.32	0.17
Flour	1000g	0.39	Paper bags	8.4	7	0.06	0.15
Sugar	1000g	0.75	Paper bags	7.5	7	0.05	0.07
Salt	500g	0.19	Cardboard folding box	16.8	7	0.12	0.62
Cream, fresh	200g	0.39	Plastic cups	6.1	54	0.33	0.84
			Aluminium lid	0.4	52.50	0.02	0.06
			<b>Total</b>	<b>6.5</b>		<b>0.35</b>	<b>0.90</b>



Fresh milk	1000ml	0.71	Liquid carton	29.3	52	1.53	2.15
			Plastic closure	1.0	54	0.05	0.08
			<b>Total</b>	<b>30.3</b>		<b>1.58</b>	<b>2.23</b>
Canned cucumber	530g	0.79	Preserving jar	239.9	3.50	0.84	1.06
			Tinplate lid	13.7	49	0.67	0.85
			<b>Total</b>	<b>253.6</b>		<b>1.51</b>	<b>1.91</b>
Instant coffee	200g	3.49	Preserving jar	408.9	3.50	1.43	0.41
			Screw cap	16.3	54	0.88	0.25
			<b>Total</b>	<b>425.2</b>		<b>2.31</b>	<b>0.66</b>

## 4.2 India

There is no official collection & recycling data available. CPCB is currently building the systems and infrastructure to collect such data.

## 4.3. Tunisia

Recycling and recovery rates are unknown as there is no registry nor formal tracking of the recycled and recovered volume.

Collection increased steadily from 2000 to 2009, then decreased. The 2018 collection volume is a quarter of the volume collected in 2009.

**Figure 3**

Tons of waste packaging collected in Tunisia between 2000 – 2009. Source: Agence Nationale de Gestion des Déchets, Tunisia





ANGed is currently considering options to revive the system, which may entail further involvement of the private sector in the management of the system, maybe via a shift to a full-fledged PRO approach.

Tunisia has issued a National Strategy for Sustainable Integrated Management of Household and Similar Waste 2020–2035.

The strategy reinforces the role of EPR: conceive an optimal sustainable integrated waste management of household and similar waste according to EPR principles and suitable economic integration.

The following measures are considered:

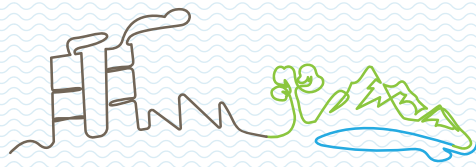
- Perform a study to select the most suitable EPR model and to define the corresponding regulatory and financial framework. Pilot cases can be conducted with selected producers and large distributors.
- Introduce source segregation of waste from households and main waste generators; develop receiving centres and sorting centres; consider PPP, implement EPR and involve the informal sector.
- Evaluate the recycling market and its development potential to increase recycling performance and foster the creation of facilities in furtherance of EPR.
- Anchoring EPR in the national waste management framework by defining the most suitable model for producers, importers and distributors; implementation will require the creation of EPR operators to manage the EPR system, for which the regulatory framework (Law 96-41) should evolve.
- Expand EPR to more enterprises and activities.

#### **ANGed is currently considering options to revive the system**

Receiving Center in Tunis, Tunisia







## 5 REGISTRY SET-UP



### 5.1 Germany

LUCID, the register managed by the German packaging register Zentrale Stelle, is a publicly accessible database. While the quantities reported by producers are confidential and not visible to the general public, it is possible for anyone to check if any given company is registered in the registry and spot a potential free rider (► <https://oeffentlicheregister.verpackungsregister.org/>).

Among registered companies, arguably compliant, the obligation of declaring packaging weight to the registry in addition to the declaration to the PRO creates an opportunity for data reconciliation.

Declared data have to be formally verified by external experts – qualified by the Zentrale Stelle – for all producers over a certain threshold of packaging material placed on the market:

- Glass > 80,000 kg
- Paper, board, cardboard > 50,000 kg
- Light-weight packaging (plastic, composites, metal) > 30,000 kg

The registration with the Central Agency and the participation in a compliance scheme are stipulated by law. Breaches can lead to market bans and trigger significant administrative fines.

Companies are not allowed to market products if not registered. The distribution ban affects both the manufacturer and each subsequent distributor.

In case of non-registration or of distribution of goods where the manufacturer has not correctly registered the brands they are distributing, there is a potential fine of up to 100,000 EUR, while non-participation in a compliance scheme may be punished with a fine of up to 200,000 EUR. Failure to report packaging data to the Zentrale Stelle will result in fines of up to 10,000 EUR and failure in the submis

## 5.2 India

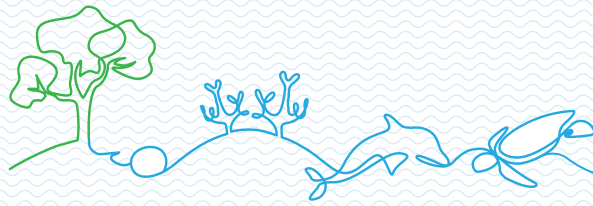
PIBOs have to register with the SPCB in the Indian states where they place products on the market or with the CPCB if they sell in more than two states. The CPCB developed and opened a registration portal. Pollution Control Boards are empowered with enforcement, including issuing fines for non-compliance, which already happened in the recent past.

It is mandatory to register and producers must communicate their EPR plans indicating how they intend to fulfil their obligations.

They have to file a yearly reporting on their achievements.

## 5.3 Tunisia

There is no registration requirement in Tunisia at this stage.



## 6 CONCLUSIONS



The above examples illustrate that EPR is a long journey and requires continuous improvement and adjustments in order to operate more efficiently and more effectively. There are various ways to achieve a functioning EPR system and the best way for each country may vary according to the local framework conditions.

Key success factors derived from the country reviews include:

- The first mandatory EPR legislative framework does not have to include all relevant aspects and too ambitious targets but is an important starting point to ensure further evolvement. Legislative amendments are part of the learning curve and are made after analysis of the first results. Gradual increase of targets allows also for the infrastructural catch-up.
- Clear roles and responsibilities should be assigned, in particular – but not limited to – the producers incl. retailers, municipalities, recyclers as well as to the national register. For instance, India has carefully defined obliged companies as “producers, importers, brand owners”, to make sure that all relevant actors are addressed.



- Clear, time-bound, quantitative targets, enforced through reporting requirements and a related enforcement and penalty regime should be defined as this helps to track the compliance of obliged companies as well as the progress made. The Indian framework does assign distinct targets per obliged company and sub-waste stream, and targets enter into force and increase at certain points in time.
- Implementation of a public registry to collect information of material or products placed on the market (to assign responsibility as this is future waste) and collection and recycling performance achieved. After nearly 30 years of packaging EPR, Germany recognised that a registry, already in use in other countries and even for e-waste in Germany, would be an effective tool to combat free-riding.
- Clear distribution of financial responsibilities and design of financial flows via EPR fees allows for assignment of funds for collection and recycling activities. The system in Tunisia proved less successful because, among others, ECOLEF is funded through taxes, meaning that the funds are not directly and automatically assigned to the fulfilment of the EPR activities.
- Introduce collective EPR as a mandatory requirement and not a voluntary option. When joining a PRO is obligatory, a competitive market and a related enforcement and penalty regime is advised. Based on long-term experience, Germany decided to mandate collective solutions for effectiveness and free-riding avoidance.
- Include a possibly wider scope of packaging materials. In Tunisia and Germany, the focus extends beyond plastics, to address several, if not all packaging materials. A relatively wide scope of packaging prevents producers from escaping the EPR obligation by shifting to other types of materials that are not yet covered by any requirements.

There are additional points that are pivotal for a functioning EPR system, such as the conduct of awareness raising measures towards the consumers and the introduction of quality standards for sorting and treatment facilities, including a related enforcement and penalty regime. They have not been an essential part of the case study analysis and are not further described in this report.

If you would like to gain more in-depth knowledge around EPR and respective lessons learnt that the Rethinking Plastics project drew after 3.5 years of project implementation, please consult the summary presentation ► [“EPR in East and Southeast Asia: Observations and Lessons Learnt”](#).



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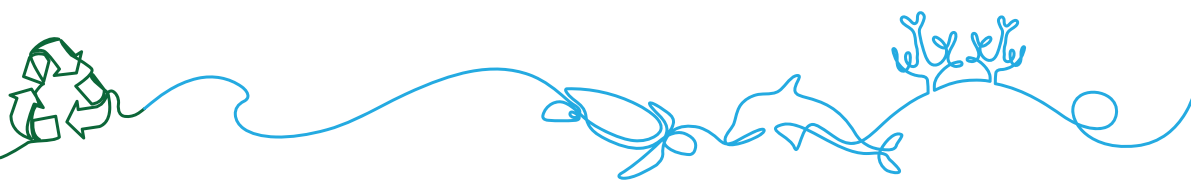
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