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Extended Producer Responsibility Alliance

30 YEARS OF OPTIMUM EPR:

HOW TO MAKE THE BEST OUT OF IT

EXPRA- EXTENDED PRODUCER RESPONSIBILITY ALLIANCE

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Executive Summary

This document outlines the principles and practices of Extended Producer Responsibility (EPR) within the context of EXPRA, an organization founded in 2013 to promote effective effective and efficient EPR systems and sustainable packaging. After studying its 32 members, known as Producer Responsibility Organizations (PROs), EXPRA identified key principles and best practices that contribute to successful EPR implementations. The aim of EPR is to shift the responsibility for end-of-life management of used products to producers, encouraging sustainable packaging, meaning being carbon neutral and circular.

The document defines EPR as a resource management tool wherein producers take on responsibility for the environmental impact of their products throughout their lifecycle, encompassing design, production, use, and disposal. By incorporating eco-friendly design practices and promoting recycling and recovery, producers contribute to building a circular economy, minimizing environmental impacts.

The four major objectives of EPR are:

- **Sustainable Production and Consumption**: EPR supports resource efficiency, recycling, and sustainable goods production to improve overall environmental performance while meeting industrial and consumer needs.
- **Incentivizing Eco-design and other prevention measures**: Producers are encouraged to redesign products to be more environmentally friendly, easier to recycle, and reusable, reducing the environmental impact. Furthermore, EPR stimulates and carries out awareness and structural initiatives with the aim to improve sustainable citizen behaviour.
- **Full Internalization of Environmental Costs**: EPR seeks to reflect the environmental impact of products in their item prices and fees, covering the separate collection, recycling and recovery of packaging waste, avoiding that consumers pay for the external environmental costs and leading to more sustainable choices.
- **Enhancing circularity and minimizing the carbon impact of packaging**: keeping packaging in circulation via EPR schemes contribute to recycling & a climate-neutral circular economy.

The implementation of a circular economy in Europe relies also on climate impact assessments. These assessments, conducted by several EXPRA members and the Commission's Joint Research Center, consistently demonstrate the positive effects of recycling on the climate. EXPRA members efforts, for instance, lead to a significant reduction in CO2 emissions – equivalent to a 400-600km car trip per person per year. Producer Responsibility Organizations (PROs) play a crucial role in maintaining a positive climate impact in waste management. They are responsible for critical tasks such as data collection, analysis, and regulatory adherence. The data they gather through EPR schemes is vital in ensuring the success of climate-friendly waste management. When PROs influence the design of waste management systems, the climate benefits are even greater. EPR systems are essential in reducing CO2 emissions through effective waste management. PROs' expertise should be utilized to shape future climate-conscious policies, solidifying their role in a carbon-neutral circular economy. Currently, EPR systems stand as vital drivers of comprehensive circularity, and the data collected through EPR schemes significantly contributes to

positive climate impacts. Recycling, a primary means of reducing CO2, hinges on recycling volume, thereby magnifying emissions reduction. EXPRA members achieve an estimated 59.2 kg of CO2 equivalent reduction per person annually through recycling. This significant reduction is the result of comprehensive calculations carried out by EXPRA, which gathered data from member countries and applied standardized models to estimate CO2 savings. These calculations take into account various factors, such as the volume of packaging waste collected, the efficiency of recycling systems, and the emissions avoided by using recycled materials in place of virgin resources. By analyzing both the direct emissions generated during collection, sorting, and recycling, as well as the indirect emissions saved, EXPRA provides a robust estimate of the environmental impact, highlighting the crucial role recycling plays in reducing carbon footprints across its member countries.

Key considerations for successful EPR implementation

- **Clear Allocation of Responsibilities**: clearly defining the roles of various stakeholders, including governments, producers, retailers, municipalities and waste management sectors, to avoid conflicts of interest, overlaps respective open responsibilities.
- **Stakeholders Involvement:** involving all affected stakeholders in the development and ongoing improvement of the EPR policy to ensure acceptability, credibility and effectiveness.
- **Effective PRO Governance and Transparency**: PROs should be owned by obligated industry players, with a broad representation of companies to make decisions and guide management to avoid a conflict of interests and to oversee and steer the performance of the PRO.
- **Non profit/ Profit not for distribution status:** all fees collected from obliged industry should be used for the tasks of the PRO and invested into the EPR system.
- **Transparent Determination of Fees and Compliance Contribution**: setting EPR fees reflecting the net costs of a respective packaging material through a transparent process, involving producers and/or sectoral representation, reflecting the net costs of managing each material taking also into account income from selling the sorted materials while avoiding cross subsidies.
- **Using Fee eco modulation:** supporting the change to only recyclable packaging in a second step of the development of EPR fees as soon as data and expertise on the net costs of the various sub materials are available.
- **Monitoring, Evaluantion and Enforcement**: governments must enforce EPR regulations and obligations, monitor individual or collective compliance, and apply sanctions for non-compliance to maintain the effectiveness of the system.
- **Preventing what is not necessary**: supporting companies to evaluate which parts of their packaging are necessary and where alternative solutions for example like re-use or refill are available is an important part of the work of an optimum PRO.
- **Improving the design for recycling and sustainability of packaging**: supporting companies to understand the needs and conditions of the end of life treatment of a respective packaging ensures that all packaging on the market are recyclable.
- **Influencing and steering the end of life treatment of packaging waste**, for example, by holding the ownership of packaging waste to be able to chose the optimum sorting plant, to design the appropriate fractions to be sorted as well the best located and equipped recycler.
- **Running smart call for tenders**: if the PRO is able to chose the collection and/or sorting and/ or recycling partner it should organize call for tenders which ensure that the best partner from an economic but also environmental point of view is chosen.
- **Ensuring a level playing field**, especially in case of competing PROs, the government has to ensure a monitoring and enforcement infrastructure, best by a special independent entity, to oversee the competing PROs and tackle free riding companies.
- **Tackling free riding also on online sales:** as companies selling their packaged goods from outside the EU directly to the private consumer often do not fulfil their EPR obligations and governments having difficulties to enforce outside their respective country, market places and fulfilment houses should be made responsible as fall back option.
- **Ambitious and Clever Policy Targets**: setting clear, ambitious, and smart targets for increased recycling and improved environmental performance of products.
- **Nationwide Collection and "Out of Home" Strategies**: ensuring accessible and convinient separate collection services nationwide, including strategies for collecting packaging waste arising outside homes wherever packaged goods are consumed.

- **Developing and implementing local and federal communication campaigns** to motivate inhabitants to sort their packaging and to sort it in the right way
- **Developing and running education initiatives and campaigns** with tailor made approaches for kindgarden, primary and secondary schools and other specific groups and situations
- **Developing and implementing anti-litter strategies and activities as well as environmental friendly behaviours:** despite all efforts some packaging are still ending up in the environment so that a PRO should run respective litter prevention programs as well as support clean up initiatives.
- **Including Commercial and Industrial Packaging within EPR**: (C&I) packaging, usually representing half of the packaging put on the market, having different stakeholders and packaging composition has to be treated differently from household packaging.
- **Enabling investments for a state-of-the-art infrastructure and facilitating innovation**: a Producer Responsibility Organization (PRO) should consistently seek ways to enhance the existing infrastructure, promoting new technologies to make the system constantly more efficient.
- **Evaluating, understanding and improving the carbon emission effects** of collection, sorting and recycling of packaging waste, inter alia to avoid a conflict between circularity and carbon neutrality
- **Integrating EPR & DRS**: whereas EPR is able to offer a solution for all packaging, DRS systems are limited to beverage packaging so that double infrastructure should be avoided but holistic and aligned solutions be developed, including new approaches like a digital DRS using existing collection infrastructure or selective collection throught reward systems
- **EPR is not a stand-alone policy principle:** combining EPR with other measures, such as Pay-As-You-Throw, landfill bans, and separate collection of other waste streams like bio-waste, for better results.
- **Integration of the Informal Sector**: in Countries with informal waste management systems, incorporating the informal sector into EPR implementation to avoid social conflicts and leverage their expertise.
- **Control vertical integration not to damage the whole EPR system**: waste management companies or recyclers running a PRO on top might have conflict of interests which the government will have to manage using the available anti trust tools.
- **Compensation of the necessary and efficient costs for the use of (municipal) infrastructure and operations** with the aim of guaranteeing an efficient and effective collection and management of household packaging waste without paying luxury approaches.

By implementing these key considerations and best practices, EPR can be a powerful tool in transforming packaging waste management globally, fostering environmental sustainability and resource conservation. It is essential for governments, industries, and stakeholders to work collaboratively to ensure the success of EPR initiatives.

The scope of this document on describing best practices of EPR from EXPRA members is comprehensive and covers a wide range of aspects related to Extended Producer Responsibility. EXPRA has undertaken an extensive internal study and analysis of its 32 members, encompassing diverse Producer Responsibility Organizations (PROs) across various countries. The research delves into understanding the structure, governance, operations, and success stories of these PROs, each of which has been established differently and operates with distinct scopes, responsibilities, and obligations. The research aims to identify the key principles and conditions that contribute to the successful implementation and performance of EPR initiatives within different national and regional contexts. EXPRA has diligently collected insights on how PROs in various countries have developed effective and efficient packaging waste management systems, with a focus on serving the interests of the obligated industry and their respective inhabitants.

By conducting an in-depth analysis of the experiences and practices of its member PROs, EXPRA has enriched its understanding of the global EPR landscape. The collective knowledge gained from this research empowers EXPRA to offer valuable guidance not only to its member organizations but also to other countries and stakeholders interested in implementing EPR or improving existing systems. The research findings highlight best practices and success stories in various areas related to EPR, including stakeholder involvement in policy development, governance of PROs, determination of fees, compliance strategies for producers, transparency in EPR implementation, governmental support and monitoring, setting ambitious policy targets, extending waste collection beyond households, innovation facilitation, and involving the informal sector in EPR activities.. The insights garnered in this document provide a solid foundation for fostering continuous improvement and driving positive change in the realm of packaging waste management on a global scale. By sharing these best practices and success stories, EXPRA aims to promote a circular economy and create sustainable packaging waste management systems that benefit both the environment and society.

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1. Introduction

EXPRA, having been founded in 2013, has spent a lot of time during the last 10 years to understand the structure, the governance, the operations and the success stories of its members. We learned that each of our 32 members, referred to as Producer Responsibility Organizations (PROs), have been set up in a different way, are having a different scope, different responsibilities and obligations and developed different solutions to establish effective and efficient packaging waste management systems in their countries, aiming to serve the interest of the obliged industry and their inhabitants. Although acknowledging all these differences, EXPRA has diligently identified key principles and conditions for their success and a good performance as well as best practices in certain areas which might inspire other countries when setting up EPR or adapting their existing system. The collective knowledge and insights gained through this extensive research have enriched our understanding of the EPR landscape and enabled us to offer valuable guidance to our members and beyond. By sharing these best practices and success stories, we aim to foster continuous improvement and drive positive change in the realm of packaging waste management on a global scale.

1.1 What is Extended Producer Responsibility?

Extended Producer Responsibility (EPR) is a resource management tool whereby producers take over the responsibility for the end-of-life management of their used products. This can include to organize the collection, sorting and treatment of their products preferably for recycling and/or recovery. Its basic feature is that actors across the value chain (manufacturers, importers and retailers) assume a significant degree of responsibility for the environmental impact of their products throughout their lifecycle[1] With at the same time fixing clearly the legally obliged entity under EPR.
This includes products' 'upstream' impact linked to the selection of materials, product design and production processes as such, as well as 'downstream' impact relating to the products' use and disposal. In so doing, producers should design their products so as to minimise their environmental impact by reduction, design-for-recycling, -repairability and/or -reusability etc. Through EPR, producers actively contribute to creating a circular economy by ensuring that their products are managed responsibly, promoting environmental sustainability and resource conservation.

[1] https://www.oecd.org/env/tools-evaluation/extendedproducerresponsibility.htm

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Through EPR, countries share and even sometimes pass classic public service responsibilities with private companies.
The concept itself was first formally introduced in Sweden by Prof. Thomas Lindhqvist from the university of Lund in a 1990 report to the Swedish Ministry of the Environment.[3] The policy first appeared in the early 1990s in a few European Member States starting with Germany for packaging[4], and later expanding to countries around the world and to many products respective waste streams.

1.2 The Goals of Extended Producer Responsibility

In principle, people agree on four major objectives of EPR as a policy measure:

1. Create a sustainable production and consumption policy.

   EPR is a key element in promoting and supporting sustainable production and consumption, resource efficiency, recycling, substitution of virgin materials, use of secondary raw materials and the production of sustainable goods. As a result, it should improve the overall environmental performance of products throughout their life cycle, while meeting industrial and consumer needs at the same time.

2. Incentives for “eco”- design / design for recycling / design for sustainability. Being charged for the end-of-life management, producers should be encouraged to incorporate changes in the design of products in order to be more environmentally sound.This should make products easier to separatereuse and recycle. In this way, the total environmental impact of a product decreases, prevention is stimulated and products are becoming more circular. PROs have a fundamental role here to help packaging

[2] EXPRA. (2016, March). *Extended Producer Responsibility at a glance: What is Extended Producer Responsibility (EPR)?* EXPRA. https://expra.eu/wp-content/uploads/2022/12/EXPRA-EPR-Paper_March_2016.pdf
[3] Thomas Lindhqvist and Karl Lidgren, "Models for Extended Producer Responsibility" in Sweden, October 1990
[4] A Description and Analysis of the German Packaging Take-Back System http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1010.1291&rep=rep1&type=pdf

manufacturers and brand owners to understand the needs of the end-of-life treatment so that they can adapt their packaging respectively, nowadays supported by a fee modulation promoting recyclable packaging.

3. Enhancing circularity and minimizing the carbon impact of packaging : keeping packaging in the economic circle via EPR schemes facilitating recycling & climate improved circular economy.
   EXPRA and its members play an instrumental role in driving the European Union's journey toward carbon neutrality through the establishment of a functional circular economy. Evidently, the role of EPR schemes in this context is paramount, as they actively maintain packaging within the economic circle loop, effectively steering recycling initiatives toward a climate-neutral circular economy.

   In particular, the effectiveness of waste management systems proves to be relevant for reducing the effects of climate change . At present, EPR systems stand as the sole entities positioned neutrally to championfacilitate and keep packaging in the economic circle. . The combined efforts of EPR systems and PROs have demonstrated significant strides in curbing or eliminating landfilling practices and elevating recycling rates.

   In fact, PROs are instrumental in orchestrating educational initiatives through awareness campaigns aimed at both consumers and industries. Furthermore, they play a vital role in assisting industries to enhance the sustainability of their packaging by meticulously collecting data to identify trends, gauge environmental impact, and develop informed strategies for optimizing packaging design, material selection, and end-of-life considerations.

   Data from PROs can be used to estimate GHG savings from Member States' waste management practices, as the EXPRA CO2 study shows.

   EXPRA and its members are crucial in facilitating the EU's shift to carbon neutrality within a circular economy framework. Balancing packaging functionality with reduced environmental impact requires holistic policies. Climate impact assessments are integral to these policies, unequivocally highlighting recycling's positive climate effect, as demonstrated by EXPRA and the Commission's Joint Research Center. EXPRA's endeavors save each inhabitant the CO2 equivalent of a 400-600km car trip annually, underscoring PROs' unique role in advancing circularity that benefits the climate. PROs hold vital importance in maintaining a lasting climate-friendly waste management impact, driven by data collection, analysis, and effective regulations. When PROs shape waste management systems, climate advantages are further magnified. EPR systems are pivotal in curbing CO2 emissions through efficient waste management, necessitating expert engagement for climate-conscious policies. The significant data from EPR schemes ensures favorable climate impact, with recycling's CO2 reduction potential tied to its volume. EXPRA members achieve a reduction of minimum 45 kg of CO2 equivalent per inhabitant annually through recycling,

akin to a 400-600 km car journey. Their role stands essential within a climate-neutral circular economy.

4. Internalization of (external) environmental costs
   The internalization of environmental costs of a product should reflect the environmental impacts of a product within the product price and create a level playing field for products which are less polluting than others. So, when purchasing a product, the consumer pays for these external impacts and not the tax payer. The environmental costs, at least, include costs for prevention advice to the packaging value chain, collection, sorting, recycling and treatment as well as awareness raising, education and anti litter campaigns..

1.3 Extended Producer Responsibility in practice

EPR is an individual obligation on companies that place products on the market are responsible for their proper end-of-life management. In practice, however, producers often work collectively to exert this responsibility by setting up Producer Responsibility Organisations (PROs), which are also called EPR or compliance schemes.
In reality, each national EPR system differs from each other. This is due to the fact, that the design of each national EPR System and each PRO may be determined by

- Globally (like the Global Plastic Treaty or OECD guidelines)
- Regional (like EU legislation (WFD / PPWD / SUP or ASEAN)
- The respective national legislation
- Local authorities who usually decide about the concrete collection (and sorting) system in their district
- Obliged industry in a respective country if and when owning the PRO respective the third party owning the PRO's

PROs become responsible for meeting take back and recycling obligations on the industry's behalf respective on behalf of their members. Some PROs even have a public service mission and operate on a non-for-profit basis; others, owned by investors and/or the waste management industry, actually seek profit.
Generally, PROs exert the following functions:

- Organise, often together with the municipalities, the take back of used products and the respective sorting if necessary.
- Ensure collection, sorting and recycling and the compliance with legal targets.
- Assist companies in prevention, eco-design, communication and awareness campaigns, often together with the municipalities.
- Create and verify data and reporting of involved stakeholders.
- Report to national authorities inter alia to ensure the necessary transparency.

2. Key considerations for successful implementation of EPR

Effective policy design on EPR will depend on national circumstances, conditions and priorities. There is no single way of implementing EPR, as the legal and reality context differs from country to country, sometimes even from region to region, making it very difficult to compare or benchmark different EPR systems. However, experience of over 30 years has led to key considerations that should be taken into account when designing EPR policy[5][6][7]:

a) Clear allocation of responsibilities among all stakeholders involved

Every EPR system involves a lot of stakeholders who are affected, have their specific interests and who need to contribute. EPR legislation should therefore clearly allocate responsibilities of national, regional or local governments, of all actors in the product chain (producers, importers, wholesalers, (online) retailers and market platforms) as well as consumers and the waste management sector (collectors, sorters, recyclers, waste to energy etc).

Clear allocation of responsibilities is necessary to avoid conflicts of interest among stakeholders . This allocation should be made in view of the policy objectives and product characteristics. Furthermore, there should be a clear mechanism whereby all legally obligated parties can be identified. This also includes to determine who is receiving financial support under which conditions respective who is paying for what.

b) Stakeholder involvement in the development of EPR

All stakeholders who are affected by the legislative EPR framework should be involved in the process of development. Stakeholder involvement creates a basis for the EPR policy and improves the acceptability and effectiveness. This involvement should be even continued after the implementation to identify and solve shortfalls and loopholes. This can be done via an Advisory Board where all relevant stakeholders are represented and can raise their voices and opinions and where recommendations can be issued to the respective PRO.

Another option, as also mentioned in Art 8a of the Waste Framework Directive (WFD) – which delineates the minimum requirements for Extended Producer Responsibility (EPR) schemes– is the establishment of an EPR dialogue platform where all stakeholders can discuss identified challenges and problems of the EPR system. The criteria set forth in Article 8a of the WFD encompass the creation of transparent, cost-effective, and environmentally beneficial systems wherein producers shoulder the responsibility for managing the end-of-life of their products. Central to these requirements are the provision of financial assurances, the establishment of precise targets for waste reduction and recycling, and a concerted effort towards fostering the transition to a circular economy. In essence, Article 8 stands as a pivotal framework, guiding the implementation of sustainable waste management practices throughout member states.[8]

c) Effective Governance of a PRO and Transparency

[5] ISWA Key Issue paper on EPR, https://www.iswa.org/index.php?eID=tx_bee4mememberships_download&fileUid=235
[6] EXPRA 10 Golden Rules on EPR, http://www.expra.eu/en/about/believes
[7] Product Stewardship institute, https://www.productstewardship.us/page/epr-for-ppp-policies-practicies-performance
[8] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0098-20180705

All EXPRA member organizations are controlled by the so-called obliged industry, those companies which are mandated with the EPR obligations.
Founding a PRO which is entrusted to fulfill the various EPR obligations on behalf of obliged companies should be done by a broad representation of as many companies as possible, from all relevant sectors, from SMEs to big multinationals. This can be achieved through an ownership by industry associations, by ownership of several individual companies representing the variety of companies, by a combination of individual companies and associations or by a cooperative structure where all companies using the services of the PRO automatically become owners as well.
The members within the General Assembly have to elect a board which is taking the decisions outlined in the articles of association and guiding the management of the PRO. Again broad representation of sectors is necessary in the board as well to ensure that all interests are taken into account and that the system is fair to all obliged companies.
As EPR is strongly linked to a public service, transparency is a primary requirement in its implementation. EPR serving most of producers in concerned sectors ensuring the same terms of service to both large companies and SME represent a public service entity in its substance therefor. Transparency is necessary to the extent that national governments can control the proper implementation of EPR and both producers and consumers can make informed choices and trust the system. This should be ensured through reporting and regular audits within a PRO and by or on behalf of the government. The scope, the ownership, the performance as well as the EPR fees and their use of a PRO should be made transparent.
Especially as we ask our inhabitants to make the additional effort of sorting their packaging waste into the right collection tool, they need to believe in the system and that they do something useful and positive. PROs should therefore show the route of the collected packaging to their final destination via videos, open house days where interested inhabitants can visit sorting and recycling plants or in other appropriate ways.

d) Non Profit/ Profit not for distribution status

The PRO providing all industry with option to fulfill its obligations should not be tool to gain profit nor should be a space for competition between stakeholders, therefor it should be set-up on non profit / profit not for distribution basis. . This ensure that all fees collected from obliged industry are used to fulfil the various EPR obligations and are invested in the necessary infrastructure, support innvations, awareness campaign, prevention and not to earn a certain margin on top.
This non profit status also allows to invest in longer term projects, especially if and when the necessary collection, sorting and recycling infrastructure has to be build up or renewed, doing this technological and company neutral in the best way for the system.
Significant funds are also channeled towards educational initiatives, awareness campaigns, and public engagement programs aimed at promoting sustainable practices and fostering a culture of responsible consumption.

e) Transparent determination of fees and compliance contributions

The definition of fees within the context of Extended Producer Responsibility (EPR) involves a structured approach that ensures fairness and accountability. To establish EPR fees, a framework of principles is essential, underpinned by good governance practices that promote transparency and a clear process. This entails a balanced representation from various sectors, fostering collaboration and broad stakeholder involvement. A pivotal factor is the active participation of senior management from the producers' side, ensuring that decision-making is informed by those directly responsible for product lifecycle management. Moreover, fee determination must adhere to transparency standards and anti-trust regulations, fostering a competitive and equitable environment. The availability of reliable data is paramount, as fees should be grounded in accurate information. Delving deeper, a comprehensive grasp of cost distribution is vital, necessitating a methodical approach to discerning differential material expenses. A dedicated entity within a Producer Responsibility Organization (PRO) comprising experts, board members, and ownership representatives serves as a specialized body to navigate these complexities, combining industry insight and regulatory alignment to establish just and effective EPR fees.

Fees for the same product should also be the same disregarding which company, large or small, does place the packaged product to the market, as fees as such should represent internalization of environmental cost, therefore they are independent from the economical size or significance of producer.[9]
In Europe, each country has adopted the European Packaging Legislation in a unique manner, leading to varied obligations for industries subject to it. Consequently, compliance costs encompass diverse factors that impact their levels, necessitating consideration when comparing compliance costs across different European schemes. Several pivotal factors influence these relative compliance costs, including: the existing collection and recovery infrastructure within the waste management sector; the types of packaging sources used to meet national recycling quotas, whether household packaging or all packaging; the collection and recyclingof household packaging tend to be costlier than packaging waste generated by industries; the proportion of costs borne by the industry, spanning from full costs for collection, sorting, and recycling to additional costs for separate collection and sorting; applicable recycling quotas and the implications of derogations; the adopted collection systems, and geographical location and population density; variances in labor costs and general overheads linked to local economic conditions.

EXPRA annually compiles an extensive document outlining the current compliance costs for national recovery systems of packaging and packaging waste. The data, sourced from respective systems and compiled to the best of EXPRA's knowledge, provide valuable insights into the intricate dynamics of compliance costs across European schemes[10]

f) Using Fee eco-modulation

[9] Art 8a No 1 d) WFD, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018L0851#d1e1355-109-1
[10] EXPRA 2.0 Knowledge Base, "EXPRA Members Compliance contributions 2023", June 2023, https://www.e-kb.eu/wp-content/uploads/2023/08/Compliance-Overview-2023-eng.pdf

The eco-modulation of EPR fees, for example taking into account recyclability, is a valuable second step in the development of an efficient EPR system. Experience has shown that economic incentives are supporting a desired trend and can speed it up.

Nevertheless, fee modulation requires a lot of data, information and experience to understand the increased level of granularity of specific packaging and their resulting differentiated costs. So, fee modulation should be introduced carefully, again following the transparency rules as above and only if and when a differentiation in the costs between various packaging can be justified by data and taking into account the additional administrative burden for companies.

Therefore, a simple differentiation between recyclable and non recyclable packaging makes sense in the beginning before eventually achieving a very differentiated feeamount level., reflecting environmental and waste management costs at the same time..For instance, in the initial stages of fee eco-modulation, a simple differentiation between recyclable and non-recyclable packaging can be implemented. Recyclable packaging, such as cardboard or glass, could be subject to lower EPR fees due to their higher potential for recycling and reduced environmental impact, while non-recyclable packaging, such as certain types of plastic or mixed materials, may incur higher EPR fees to incentivize producers to use more environmentally friendly materials. Therefore, a gradual transition towards a more differentiated fee amount level can be achieved, with fee modulation aligning closely with the environmental impact and recyclability of packaging materials.

g) Monitoring, Evaluation and Enforcement

Producers are often able to choose how to meet their responsibilities, individually or collectively via a PRO. Both choices should fulfil the same targets and should be monitored and enforced by the government in the same way. This monitoring and enforcement is extremely important for the success of each system as free riding can undermine the system, keeping necessary funding away from the system by those who are not or not fully paying their EPR fees and by demotivating those companies which are compliant. This successful monitoring and enforcement can only be achieved by dedicating enough resources to either a special authority or to a dedicated department within an existing authority.

An effective and efficient legal framework accompanied by adequate regulatory investigation and enforcement activity is a primary prerequisite for successful implementation of EPR. Governments should enforce this legal framework to close loopholes and trace free riders. Governments must monitor whether all stakeholders vested with responsibilities fulfil their respective obligations. The legal framework should include control mechanisms for government and sanctions for not reaching objectives and targets. The implementation of EPR should also be periodically evaluated by governments and, if necessary, be adjusted.

h) Preventing what is not necessary to be able to reduce the packaging put on the market

Packaging serves a crucial role in protecting products, preventing damage, reducing food waste, and preserving their quality during transportation and

storage. While packaging is primarily intended to serve these functions, it should also be designed with sustainability in mind to minimize its environmental impact. An optimal Product Responsibility Organization (PRO) supports companies in evaluating whether there are alternatives such as reducing unnecessary packaging, implementing reusable or refillable options, or adopting more sustainable materials. By prioritizing sustainability without compromising the essential functions of packaging, companies can contribute to reducing the overall environmental footprint associated with packaging materials and waste.

i) Improving the design for recycling and sustainability of packaging

Originally, companies were designing their packaging concentrating on ensuring that the product reaches the consumer in the best way, that the packaged products looks attractive to the customer and that the consumer is able to use to product in an easy way; whether the packaging could be later collected, sorted and even recycled or alternatively re-used was not in the scope of the design exercise.
Here, a PRO plays an important role to translate the needs of the waste management sector into the language of the packaging designers and to assist them to design the packaging in a better way so that it can stay easily in the economic circle.

j) Influencing and steering the end of life treatment of packaging waste

An effective PRO occupies a central position within this packaging cycle. It collaborates with all stakeholders, understanding their optimal roles, identifying and resolving financial and organizational gaps but also might support the financing of new equipment and technology to ensure efficient recycling of packaging. By doing so, the PRO ensures that the circular system operates optimally, retaining as many packaging items as economically and environmentally viable. PROs positioned
outside the circular system, focused solely on financial contributions and therefore not having any influence on the operations like sorting and recycling, lack the ability to influence stakeholders to act optimally, potentially undermining the entire system's performance.

k) Running smart call for tenders

In cases where the PRO is allowed to organize the operations of the system meaning where the PRO is able to chose the collection and/or sorting and/ or recycling partner it should organize call for tenders which ensure that the best partner from an economic but also environmental point of view is chosen. Existing rules for public tendering can be a very good guidance for the PRO; it should also be checked whether and how environmental considerations can be integrated in the tendering conditions to ensure that the best option is environmentally and economically the best bid.

l) Ensuring a level playing field in case of competing PROs

If national or regional legislation allows multiple PRO's to compete for the same waste stream, also a fair level playing field should be ensured to avoid the achievement of policy targets by cherry picking or misusing legal grey zones. Experience has shown that the need for monitoring and enforcement is higher than within a single system provider as the demand to make profits increases the motivation to look for loopholes and lower standards and to avoid to serve certain areas of the country, for example where population density may be low thereby increasing costs. The additional need for enforcement has been acknowledged also in Art 8a WFD – minimum requirements of EPR where Member States are asked to establish a dedicated entity – public or private – to oversee competition.

m) Tackling free riding with focus on online sales

Selling packaged goods directly to the private consumer, especially from companies seated outside the respective country and facilitated by so called market places and fulfilment houses, has exploded over the last 15 years. Experience has unfortunately shown that many of these companies are not fulfilling their national obligations especially not registering and paying their EPR fees.

Market places and fulfilment houses, having most of the necessary data and direct contacts to these companies, can play here a crucial role in either ensuring that these companies fulfil their obligations or in being the company obliged by EPR in case the original company is non compliant.

n) Ambitious and clever policy targets are a necessity

A fundamental goal of EPR is to increase the collection and recycling of respective used products while improving their overall environmental performance. Therefore, ambitious, feasible, clear and smart targets need to be set.

These targets may encompass qualitative and/or quantitative measures and could apply specifically to different packaging material streams, rather than being based on product types or categories. Ambitious targets are vital to drive maximum effort and progress towards sustainability goals. However, they should also be realistic to prevent undue strain on investments and operations. Incremental targets, set well in advance and communicated transparently, can foster continuous improvement and provide certainty for investment decisions. Therefore, a balanced approach is necessary, ensuring that targets are both challenging and attainable, while also allowing for flexibility and adaptation to changing circumstances. By setting realistic targets that promote continuous improvement without placing undue burdens on stakeholders, EPR systems can effectively drive progress towards a more sustainable future.

o) Nation- respective region or province wide collection and "out of home" strategies

Legislation on EPR for municipal waste streams should avoid cherry picking between collection areas and ensure the adequate quality and accessibility of collection services areawide, with a homogeneous, coherent system in terms of image and communication, organized at the local and/ or regional level, of

course taking into account the local specifics but using the best available solution for the specific situation, avoiding experiments.
In this case, a system has to find the best balance between the goal to have the same collection for the whole country/region/province which is easing the local and federal/provincial communication towards the inhabitants and the goal to have the optimum system for the local circumstances which could improve the overall performance.
A PRO also has to work with local authorities and waste management companies when identifying challenges in the collection which could not be overcome within a reasonable period of time. This means to adapt a collection system when it is not working and not delivering.
Although of course most household packaging is arising at home (overall in average around 90%) and should be collected in the most convenient way, packaged products are also consumed out of home while being in the office, travelling, in the city, in the nature etc pp. Therefore, also in these occasions packaging waste has to be collected in an appropriate way
This counts even more as in these occasions the danger of litter is higher than at home and therefore these packaging are in the political focus and politicians and inhabitants expect a good solution from industry and EPR. So, a strategy and implementing activities how to collect packaging which are arising on the go (on the streets, at public transport places, in the offices, in leisure areas is very important to complete the collection system.

p) Developing and implementing local and federal communication campaigns to motivate inhabitants to sort their packaging and to sort it in the right way

Authorities, National and local and EPR organizations should support an environmentally and economically sustainable recycling society, which benefits the inhabitants of the country. For that purpose the communication with consumers is a key prerequisite for a successful EPR organization – irrespective of the type of system chosen, selective collection cannot perform up to standard without the consumers‘ understanding and involvement. That is why it is of key importance for PROs to engage in raising awareness about sorting and recycling and generally promoting environmentally friendly behavior among the inhabitants, as well, as providing support for educational programmes.

q) Developing and running education initiatives and campaigns with tailor made approaches for kindgarden, primary and secondary schools and other specific groups and situations

Environmental education from an early age plays an important role in building a society that cares for nature. For that purpose development and implementation of targeted educational campaigns and programs starting as early as kindergartens but also in schools and universities are pivotal for real impact. Training the kids to care for nature by learning how to sort and dispose properly of waste creates environmental habits for life and makes them “environmental ambassadors” even training and motivating their parents and other elders
Unfortunately, not all packaging is collected in the right bins but entering our environment because of wrong behavior of people and/or inappropriate collection infrastructure. Also for these cases, a PRO should look for solutions,

anti littering strategies and cooperate with partners to clean up to make people aware of this problem.
Mandatory is an litter prevention program which involves all inhabitants to make them aware of the harm that litter is causing and how to act in an alternative way. For those packaging which is still littered, PROs should support litter clean up activities so that littered packaging is not ending in our oceans or other places.
Furthermore, Producer Responsibility Organizations play a pivotal role not only in ensuring the pursuit of educational and communicative objectives to actively engage consumers but also in fostering a sense of shared responsibility. This significance is heightened in the realm of household packaging, where citizens' participation becomes a linchpin for achieving recycling and recovery targets. As such, the role of EPR organizations becomes indispensable as they actively promote educational initiatives and awareness campaigns that resonate with the public. By instilling a deeper understanding of the environmental impact and benefits of responsible consumption and disposal, these organizations encourage not only separate collection and recycling practices but also discourage the detrimental practice of littering. In essence, the multifaceted efforts of EPR organizations contribute not only to ecological goals but also to the empowerment of individuals as conscientious stewards of the environment, fostering a collective commitment to sustainable practices.

r) Special consideration of Commercial & Industrial packaging

Packaging arising at households respective at similar occasions and their collection and treatment bring totally different challenges to a PRO than commercial and industrial packaging. Whereas the collection of household packaging has to be organized and financed usually in cooperation with municipalities to ensure that they are collected separately, the collection of commercial packaging is often already done as part of the contracts of retailers, industry and other commercial end-user with the waste management company taking care of the waste of their client in general.
Here, the focus of the job of the PRO is the collection of data, namely how much packaging is collected and whether and how the packaging waste is recycled,. Partly education, awareness and incentives how commercial packaging can be better collected separately is necessary and included in the scope of the PRO.

s) Enabling investments for a state-of-the-art infrastructure and facilitating innovation

A Producer Responsibility Organization (PRO) should consistently seek ways to enhance the existing infrastructure, inter alia to ensuring the correct number of containers for efficient collection. Additionally, there is a pressing need for technological advancements, especially in the treatment of packaging waste across collection, sorting, and recycling stages, in order to enhance packaging circularity. PROs can play a pivotal role in supporting these processes by providing a conducive environment for start-ups and real-world testing of innovative concepts. Technological advancements in the treatment of packaging waste, spanning collection, sorting, and recycling processes, play a vital role in enhancing the circularity of packaging. PROs can actively contribute

to these processes by creating an environment conducive to start-ups and the real-world testing of new ideas

t) Evaluating, understanding and improving the carbon emission effects

The use of recyclates in new packaging instead of virgin materials is usually very positive from a carbon emission point of view as it avoids the extraction of raw material and is usually less energy intensive. So, it is very useful if the PRO is evaluating and understanding these positive effects of the EPR system by analysign the various operations, so one of side accreting the savings versus the use of virgin material deducting the emissions of collection, sorting and recycling.

Moreover, an optimum PRO can understand whether and how the operations might be improved to further reduce negative carbon emission effects respective which route is the better one to chose. This might become even more important in the future if various routes of recycling (mechanical and chemical) can be chosen. Hereby, it is important to understand that a PRO should be in a neutral position to be able to chose the best option to fulfil its various targets taking into account economical and environmental considerations. Chemical recycling might play a relevant role in the future for the recycling of plastic packaging which cannot be recycled mechanically as well as to ensure recyclates for food packaging.

u) Harmonizing EPR legislation with DRS collection systems

Whereas an EPR system for packaging is able to manage all packaging put on the market namely to collect, sort and treat them, DRS systems are concentrated on certain kinds of packaging, usually beverage containers, which can be returned to the retailer intact and without hygiene challenges. So, introducing a DRS on top of an EPR system means to add an additional infrastructure to an existing infrastructure and doubling the cost for just a very small part of the packaging put on market.

To avoid a waste of previous investments, to avoid a weakening of the existing EPR system and to ensure a lean administrative burden for industry it is important to align the 2 systems to avoid that they have 2 totally separate independent lives.

Moreover, it should be seen whether the advantages of a reward system can be combined with the existing infrastructure to avoid double investments. This can for example be done by the so called Digital DRS which has been recently developed and is currently tested and other initiatives like reward selective collection without deposit.

v) EPR is not a stand-alone policy principle

A single policy measure can rarely achieve the stated policy goals. Policy measures have the best results when and if applied in a mix. So, other measures like Pay-As-You-Throw (when the inhabitants are charged for the amount of residual waste they produce), landfill bans or taxes, local statutes to encourage citizens to sort their waste, separate collection of other municipal waste streams (especially biological waste) should be introduced together with EPR to ensure a maximum performance.

w) Integration of the informal sector

Not all countries under EPR have (yet) a structured waste management system where professional educated people are collecting and treating the waste from households and commercial places respective where waste is collected separately at source but just taking to a landfill or even open dumpsite.
In several countries, this missing infrastructure is used as income possibility for unemployed people to collect the waste which has a value from households, from commercial sites and/or even from landfills.
Establishing an EPR system with the goal to build a classical collection, sorting and recycling system is conflicting with the existing informal system as they see the new system to steal their valuable materials which leads to conflicts.
Therefore, the establishment of EPR systems in these countries have to take the informal sector into account by working with them and not against them, best already when the legislation is discussed and designed so that the people working in the informal sector are included in the new system.

x) Controlling vertical integration not to damage the EPR system

Depending on the regulations of a particular country, PROs may be non-profit or for-profit companies. The latter type is generally owned by waste management companies thereby becoming vertically-integrated PROs. Vertical integration might give respective PROs certain unfair advantages so that governments are asked to take additional measures. On the other side, people claim that vertically integrated companies can raise synergies within their chain.

Vertical integration provides Producer Responsibility Organisations (PROs) with the potential and incentive, in theory, to impact competitors in both upstream and downstream markets. This is achieved by implementing strategies such as price increases through refusal to supply, bundling of products, and leveraging—referred to as vertical foreclosure. Through such practices, the integrated entity might sacrifice some profits at one supply level to gain additional profits at another. This approach can make it challenging for rivals to compete as they may lose customers or miss out on economies of scale.
Moreover, the existence of vertically-integrated entities introduces a tangible risk of information leakage. This refers to the possible flow of commercially sensitive competitor information to the vertically-integrated entity's competing subsidiary, often operating at a different supply level. This scenario can lead to an unfair advantage for the integrated PRO. The interaction of vertical foreclosure and information leakage could reinforce each other's effects.

Empirical evidence from Estonia, Romania, and Slovenia indicates that the entry of vertically-integrated entities into the market has resulted in vertical foreclosure and information leakage. Non-integrated players have reportedly witnessed a decline in their market share in favor of vertically-integrated entities. In certain instances, this shift has correlated with reduced collection of packaging waste and a decrease in facilities for sorting and recycling. In contrast, countries like Czechia and Slovakia, where vertical integration hasn't been permitted, have not experienced such effects.

An illustrative case in Germany saw the national competition authority intervene to prevent the vertical integration of a Waste Management and recycling company with a PRO due to concerns about potential vertical foreclosure. To safeguard the interests of customers, consumers, and the environment, the European Union and its Member States should maintain vigilance, subjecting vertical mergers involving PROs to meticulous scrutiny by competition authorities. This approach is essential to preserving the well-being of various stakeholders and ensuring sustainable waste management practices[11].

y) Compensation of necessary costs for the use of (municipal) infrastructures and operations

Any kind of EPR system that uses municipal infrastructure and municipal services will have to guarantee a compensation of the respective necessary costs for collecting and eventually managing household packaging waste.

What is “necessary” and how this should be demonstrated by municipalities to the PRO should be determined by an agreement between the PRO and the association of local authorities facilitated by the legislator to avoid a constant discussion and fight between local authorities and the EPR system, for example mediated by an independent third party if necessary.

Here it could be helpful if and when certain municipalities are not running the collection by an inhouse waste management company but by calling for tender. The results of such tenders can serve as indication for the “necessary” fair costs that the PRO has to pay to those municipalities running the service inhouse.

z) National Collaboration Among PROs Across Various Waste Streams Under EPR

In many countries, Producer Responsibility Organizations (PROs) managing different types of waste—such as packaging, electronics, and batteries—are beginning to work more closely together. This national-level collaboration helps to create a more efficient and coordinated waste management system. By sharing resources, knowledge, and best practices, these PROs can improve how waste is collected, processed, and recycled across different sectors, leading to more streamlined and effective operations. When PROs cooperate, they can develop unified strategies to tackle common challenges, like increasing recycling rates and reducing waste that ends up in landfills. This collaboration ensures that EPR systems function smoothly by minimizing redundancy and addressing systemic issues such as cross-contamination between different waste streams. Additionally, working together allows PROs to implement integrated solutions for waste diversion, resource recovery, and environmental impact reduction, enhancing the overall efficacy of the waste management framework. Moreover, national cooperation among PROs fosters innovation by combining expertise and facilitating the adoption of new technologies and methods. It also enables a more holistic approach to regulatory compliance and sustainability efforts, as

[11] Oliver Bretz and Daniele Pinto, "Study on the vertical integration of Producer Responsibility Organisations and their effect on the market", Euclid Law The Competition Law Firm, March 2020.

PROs can align their practices with broader environmental goals and policies. This approach not only improves operational efficiency but also contributes to the development of a circular economy, where materials are continuously reused and recycled, ultimately supporting long-term sustainability and reducing the ecological footprint.

3. Best Practices: the successful stories of EXPRA members

As highlighted in the preceding section, the design of effective EPR policies depends on the unique national circumstances, conditions, and priorities of each country. While there is no one-size-fits-all approach to implementing EPR due to varying legal and contextual realities, the wealth of experience accumulated by EXPRA's PROs over three decades demonstrates how thoughtful consideration in EPR policy design can yield tangible results. This section showcases exemplary initiatives and success stories from EXPRA members, illustrating the organization's commitment to fostering effective and efficient Extended Producer Responsibility (EPR) systems across diverse regions.

A) Clear allocation of responsibilities among all stakeholders involved

In EPR systems, clear responsibilities must be allocated to all stakeholders, including governments, producers, retailers, consumers, and waste management sectors, to prevent conflicts of interest. These allocations should align with policy goals and product characteristics, with transparent mechanisms for identifying obligations and financial arrangements.

Among the notable success stories is that of **Fost Plus**, EXPRA's member in Belgium. For over three decades, Fost Plus has been instrumental in establishing Belgium as a leader in household packaging waste management. Belgium's approach to EPR, particularly in managing household packaging waste, has been marked by innovative practices and a strong legislative framework. Fost Plus's approach to responsibility allocation is exemplified in its collaboration with municipalities. Municipalities are responsible for waste collection from households, ensuring that packaging waste is properly sorted and collected. Fost Plus, as the designated EPR organization, then takes over the responsibility for financing and managing the recycling process. This clear division of responsibilities ensures that waste is efficiently managed from collection to recycling, with each stakeholder fulfilling their designated role. Furthermore, Fost Plus works closely with producers to ensure compliance with EPR obligations. Producers are responsible for financing the collection and recycling of packaging waste, and Fost Plus facilitates this process by providing guidance and support to producers. Through transparent mechanisms, Fost Plus ensures that producers fulfill their financial obligations, contributing to the sustainable management of packaging waste. Additionally, Fost Plus implements extensive public awareness campaigns to educate consumers about proper waste sorting practices. By empowering consumers with knowledge, Fost Plus encourages active participation in waste management efforts, further reinforcing the clear allocation of responsibilities among stakeholders.

In Italy, **CONAI (Consorzio Nazionale Imballaggi)** exemplifies effective governance in producer responsibility. As a private non-profit consortium, CONAI is owned by

industries and comprises over 750,000 packaging manufacturers and fillers. Its primary role is to oversee the management of packaging waste through a comprehensive network of Packaging Material Organizations (PMOs). CONAI's governance model ensures that responsibilities are clearly defined and allocated among all stakeholders. Producers are responsible for financing the separate collection, sorting operations, and recycling of packaging waste. Municipalities, on the other hand, are responsible for collecting and sorting the waste, while PMOs facilitate the recycling process. This clear division of responsibilities among all stakeholders involved ensures accountability and transparency in the packaging waste management chain. Established in accordance with the Ronchi Decree of 1997, CONAI's governance structure adheres to EU directives and national legislation, promoting a shift towards sustainable waste management practices. Through its collaboration with municipalities and PMOs, CONAI ensures that materials collected separately undergo proper recycling and recovery processes, contributing to the circular economy objectives.

ENVI – PAK in Slovakia has been operating on the market for more than 20 years. The EPR legislation was implemented in 2016, and ENVI - PAK became a PRO based on an authorization project approved by the Ministry of the Environment. In Slovakia, producers run the system by enforcing operational and financial responsibility. A competitive environment enforces compliance with the law by all stakeholders. Like ENVI-PAK's best practices showed, in the case of a competitive model, where multiple PRO organizations operate in a country, there is a need to place a strong emphasis on clear legislative requirements towards PROs and, in particular, to consistently require all PROs to comply with their legal obligations. For this purpose, state controls on PROs, producers, and collectors are most effective.

EKO-KOM, the authorized packaging company in the Czech Republic, was founded in 1997 by industrial companies producing packaged goods. This non-profit joint-stock company has created and effectively operates a nationwide system that sorts, recycles, and recovers packaging waste at a high-quality European level. As a result, the Czech Republic is at the forefront of packaging sorting and recycling. A good-quality national legislative framework ensures that each link of the packaging and packaging waste management chain has a clearly defined role, duties, and targets in Czech legislation. The role of EKO-KOM’s EPR system in the Czech Republic is explicitly specified in the Authorization issued by the Ministry of the Environment, which also monitors its fulfillment. EKO-KOM’s EPR system must meet the set collection rate of used packaging and the recycling and recovery rate of packaging waste on behalf of its clients. Companies involved in EKO-KOM’s EPR system fulfill their legal obligation to ensure the take-back and recovery of their packaging under the same transparent conditions. Based on the reported quantity of their packaging placed on the market in the Czech Republic, clients pay a fee according to the rate tariff, which is always publicly available on Fees – EKO-KOM's website. EKO-KOM uses these fees to finance the cost of packaging waste collection, transport, sorting, and recovery. This means that municipalities participating in the system send a report on the amount and type of municipal waste collected separately by the municipality in a given quarter. This report is used to pay the municipality a reward for providing and servicing take-back points and for recovering municipal waste, and now also a reward for cleaning and handling single-use plastic packaging. These rewards are transparently posted in a publicly available reward tariff and are identical for municipalities in the same size

groups. Similarly, EKO-KOM works with various other partners providing down-stream waste management services: collection companies, sorting lines, various recycling companies, waste-to-energy facilities, decontamination lines etc. All of these partners provide quarterly reports on the amounts of packaging waste handled, treated, recycled or recovered. These reports serve as a basis for transparent financial compensations to these partners based on publicly available reward tariffs. As EKO-KOM is legally forbidden to operate with waste on its own, broad network of collection and treatment partners is essential in ensuring long-term stability and predictability of the packaging recovery system. Thanks to EKO-KOM's financial incentives distributed to multiple waste treatment points, Czech municipal waste management industry withstands short-term disruptions and is steadily navigated towards fulfilling legally binding recycling targets.

b) Stakeholder involvement in the development of EPR

Engaging all stakeholders in the development and ongoing evaluation of EPR frameworks is vital for their effectiveness and acceptance. Continuous involvement enables the identification and resolution of any shortcomings or loopholes. This can be achieved through mechanisms like Advisory Boards or EPR dialogue platforms, allowing stakeholders to express concerns and provide recommendations to the relevant PRO.

For example, the Spanish PRO **Ecoembes** has established an Advisory Board comprising representatives from municipalities, industry associations, environmental NGOs, consumer organizations, and other pertinent stakeholders. This board serves as a dedicated platform for stakeholders to provide input and recommendations on various aspects of Ecoembes' EPR initiatives. Through regular meetings and consultations, stakeholders contribute diverse perspectives, enabling the identification of challenges, addressing shortcomings, and improving the effectiveness of packaging waste management strategies. Ecoembes fosters continuous engagement with stakeholders throughout the entire lifecycle of EPR initiatives. Through surveys, workshops, and public consultations, Ecoembes actively solicits feedback from stakeholders to ensure transparency and inclusivity in decision-making processes. This approach facilitates ongoing dialogue and collaboration, enabling stakeholders to voice concerns, propose solutions, and monitor the progress of EPR programs. In addition to the Advisory Board, Ecoembes provides dialogue platforms and forums where stakeholders convene to discuss critical issues, share best practices, and exchange knowledge and expertise related to packaging waste management and recycling. These platforms offer valuable opportunities for stakeholders to collaborate on innovative solutions, explore emerging trends, and collectively address common challenges in advancing the circular economy agenda.

Through these comprehensive practices, Ecoembes demonstrates its commitment to fostering multi-stakeholder collaboration and ensuring the effectiveness and acceptance of EPR frameworks in Spain. By embracing stakeholder involvement as a cornerstone of its approach, Ecoembes strives to achieve sustainable solutions for packaging waste management, thereby contributing to environmental conservation and resource efficiency objectives.

c) Effective Governance of a PRO and Transparency

Effective governance of a PRO requires broad representation of obligated industry members, ranging from SMEs to multinational corporations. This can be achieved through various ownership structures, ensuring fairness and inclusivity. Transparency is crucial for public trust and governmental oversight, necessitating clear reporting, regular audits, and open communication about EPR fees and performance. PROs should engage in transparent practices, such as hosting open house days and providing information on the journey of collected packaging, to foster public confidence in the recycling system

EXPRA members exemplify best practices in transparency, as demonstrated by organizations like **The Hellenic Recovery Organization (HERRCO)** in Greece. HERRCO ensures effective governance and transparency through rigorous verification procedures for municipal and industrial/commercial packaging waste. For municipal packaging waste, HERRCO employs detailed recording and verification methods, including mass balance and statistical estimates, to ensure accurate recycling quantities. External auditors regularly inspect sorting facilities to verify compliance, providing stakeholders with confidence in the reported recycling figures. Similarly, in the industrial and commercial packaging waste (CIWP) sector, HERRCO contracts major collectors/traders/recyclers and conducts on-site sampling and inspections to prevent double counting, ensuring reliability in reporting and fostering trust among stakeholders.

In Italy, for example, one of the most important best practices for the Consortium system, which manifests in various aspects, is transparency. In this way, **CONAI** collaborates with municipalities under specific open agreements governed by the ANCI-CONAI National Framework Agreement to ensure proper recycling and recovery processes for materials collected separately, and to ensure proper contributions to the municipalities according to the quality and quantity of their separate collection. Transparency also recurs and it's emphasized concerning the evidenced by its commitment to transparent data reporting like in its General Programme for prevention and management of packaging and packaging waste or other related public documentation. This dedication to transparency has been recognized through different national and international studies, such as the one commissioned to the Bocconi University and the Wuppertal Institute, which highlighted CONAI's leadership in qualitative and quantitative data transparency at the European level.

ENVI-PAK in Slovakia also maintains transparent relations with collection companies and municipalities, enabling detailed understanding of collection activities and cost structures. This transparency facilitates efficient infrastructure composition and service tendering processes, contributing to the optimization of waste management operations. Additionally, ENVI-PAK's Coordination Centre plays a central role in coordinating PRO activities, with its responsibilities defined by law to ensure smooth collaboration and effective implementation of EPR initiatives.

In Colombia, **the National Environmental Licensing Authority (ANLA)** oversees EPR performance evaluation against legal requirements. ANLA receives annual reports to assess compliance, ensuring accountability and adherence to regulations. This regulatory oversight enhances transparency and accountability within the EPR framework, promoting responsible waste management practices and environmental stewardship.

d) Non Profit/ Profit not for distribution status

The PRO, which we believe should be owned by the obliged industry, should operate on a non-profit or profit not for distribution basis. This ensures that all fees collected from the obliged industry are reinvested into fulfilling EPR obligations, developing infrastructure, supporting innovations, and conducting awareness campaigns, rather than generating profit margins. Maintaining a non-profit or profit not for distribution status is a prerequisite for EXPRA membership, which is upheld by our 33 members. This status ensures that all funds collected from the obliged industry are dedicated to fulfilling EPR obligations and supporting strategic projects. By prioritizing environmental initiatives over financial gain, EXPRA members invest in long-term projects, including educational initiatives, awareness campaigns, and public engagement programs. This not-for-profit approach emphasizes environmental protection and positions recycling as a public service rather than a business endeavor. By allocating resources towards sustainable practices and responsible consumption, EXPRA members play a crucial role in promoting a culture of environmental stewardship and contributing to a more sustainable future.

e) Transparent determination of fees and compliance contributions

Transparent determination of fees and compliance contributions in Extended Producer Responsibility (EPR) systems demands a structured approach rooted in fairness and accountability. Essential to this process is the establishment of principles governing fee determination, supported by transparent governance practices and broad stakeholder involvement. Active participation of producers' senior management ensures decisions align with product lifecycle management responsibilities. Adherence to transparency standards and anti-trust regulations fosters a competitive environment, while reliable data informs fee setting. Understanding cost distribution requires a methodical approach, managed by a specialized entity within the Producer Responsibility Organization (PRO). In Europe, compliance costs vary due to unique national implementations of packaging legislation, influenced by factors like infrastructure, packaging sources, and recycling quotas. **EXPRA annually compiles data on compliance costs**, offering valuable insights into the diverse dynamics of European recovery systems.

For example, the Italian PRO, **CONAI**, in order to fulfil the obligation and maintaining the highest performances towards its members, linked to this open approach, implements the EPR Fee eco-modulation in order to distribute costs for waste collection, recycling, and recovery among manufacturers and users, encouraging the

use of recyclable materials and based on fundamental net cost principle. The CONAI Fee modulation is based on 2 main principles: recyclability of the packaging material and the net cost approach for managing packaging waste. Since 2018, CONAI has decided to start a diversification of the Environmental Contribution starting from the most complex material, plastic, for the various types and sorting and recycling technologies, with the aim of encouraging the use of the most recyclable types and using the Contribution lever as a tool to promote the reduction of its environmental impact. Moreover, starting from 2019, the eco-modulation for paper and cardboard packaging started. For the paper and cardboard supply chain, the diversification project has been oriented, starting from the application of an additional contribution (extra CAC) relating to polylaminated containers mainly made of paper suitable for containing liquids to improving the effectiveness of the recovery process of the most complex cellulose-based packaging to be recycled, through the consolidation and development of collection, sorting and recycling activities.CONAI then continued with the contribution diversification process for other composite – or polylaminated – packaging types mainly made of paper (other than CPL) – always through the application of an extra CAC.

f) Using Fee eco-modulation

The eco-modulation of EPR fees, considering factors like recyclability, is a valuable step toward an efficient system, accelerating desired trends through economic incentives. However, it requires ample data and experience to justify differentiation in packaging costs. Initially, a simple categorization between recyclable and non-recyclable packaging is prudent before progressing to more nuanced fee structures.

For instance, **in Colombia**, fee eco-modulation represents a cornerstone of EPR implementation, with a focus not only on the volume of packaging material but also its recyclability. The application of eco-modulation extends beyond mere weight considerations, integrating a sophisticated matrix known as *ASTRX*. This matrix, developed by the *Sustainable Packaging Coalition*, encompasses various aspects of recyclability, including the availability of markets for recycled materials, processing capacities, and consumer engagement in separation practices. By aligning fees with recyclability metrics, Colombia's EPR framework fosters a holistic approach to sustainable packaging, promoting eco-design principles aimed at minimizing environmental impact throughout the product lifecycle. Furthermore, ongoing efforts in Colombia aim to expand eco-modulation criteria to encompass additional variables, such as eco-design elements not directly linked to weight reduction. This forward-thinking approach underscores Colombia's commitment to advancing EPR practices and promoting a circular economy ethos.

Similarly, in Canada, specifically in the province of Quebec, **Éco Entreprises Québec (EEQ)** leads the charge in implementing ecodesign initiatives and fee eco-modulation strategies. At the heart of EEQ's mandate lies a dedication to promoting sustainable packaging practices among member producers. Through ecodesign incentives and ecomodulation mechanisms, EEQ encourages producers to adopt packaging solutions that prioritize recyclability and environmental stewardship. These incentives include bonuses for innovative packaging designs that facilitate recycling and reduce

environmental impact. Moreover, EEQ's communication efforts extend beyond producers to engage key stakeholders across the value chain, fostering collaboration and knowledge-sharing in pursuit of sustainable packaging solutions. By integrating ecodesign principles and fee eco-modulation into its operations, EEQ drives systemic change, positioning Quebec as a leader in sustainable packaging innovation within Canada and beyond.

In 2023, **Rinki** introduced eco-modulation for glass packaging to glass packaging producers and Producer Responsibility Organizations (PROs). This initiative stemmed from concerns raised by glass recyclers about the presence of unwanted particles in glass recycling streams, such as ceramics, stainless steel, opal glass, and painted glass packaging. To address these challenges, Rinki implemented eco-modulation to promote the use of packaging that is easier to recycle. The core idea behind eco-modulation is to incentivize the market by offering lower recycling fees for packaging that is more recyclable.

The eco-modulation system for glass packaging is divided into two classes:

- Class A: Includes conventional glass packaging, which makes up the majority of packaging in the Finnish market. This category has a standard annual recycling fee. Class A also encompasses more challenging glass packaging types, such as painted glass, sapphire glass, and glass wrapped in other materials. Although these types also have a standard fee, Rinki actively encourages producers to opt for more recycling-friendly alternatives.
- Class B: Covers packaging containing ceramics (CSP), stainless steel, or more than 5% non-glass materials. Since 2023, this category has been subject to an eco-modulated recycling fee.

By implementing eco-modulation, Rinki and the PROs aim to enhance the recycling rate of glass packaging and promote the use of more recyclable packaging materials among producers.

g) Monitoring, Evaluation and Enforcement

Monitoring, evaluating, and enforcing Extended Producer Responsibility (EPR) systems are vital for their success. Governments must ensure that all producers meet their obligations, either individually or through a Producer Responsibility Organization (PRO). Adequate resources and regulatory oversight are necessary to prevent free riding and maintain system integrity. A robust legal framework, accompanied by effective enforcement mechanisms and regular evaluations, is essential to address loopholes and ensure compliance with objectives and targets.

For instance, in Belgium, **Fost Plus** fosters stakeholder engagement through its *Interregional Cooperation Agreement*, ensuring consistent collection and sorting of materials nationwide. This collaborative effort results in high participation rates and stable material flow, contributing significantly to Belgium's outstanding recycling performance. The Interregional Cooperation Agreement serves as the foundation for

collaborative efforts among Belgium's regions to ensure the efficient collection and sorting of materials on a nationwide scale. The Interregional Packaging Commission, established as part of this agreement, plays a crucial role in coordinating these efforts across regions. Comprised of representatives from various stakeholders, including producers, recyclers, and government bodies, the commission serves as a platform for dialogue and collaboration to monitor. Through regular meetings and discussions, stakeholders work together to harmonize policies and practices related to packaging waste management. By fostering collaboration and alignment among stakeholders, the Interregional Cooperation Agreement and the Packaging Commission contribute significantly to Belgium's outstanding recycling performance. This collaborative approach results in high participation rates and a stable material flow throughout the country, further reinforcing Belgium's position as a leader in sustainable waste management practices.

Similarly, in Colombia, **Visión 3030 - ANDI** adopts a governance structure that is efficient in terms of monitoring, evaluation, and enforcement, including 15 boards with 15 producers from the 10 most representative production sectors and working groups representing different sectors. These entities collaborate to strategize on fee structures, communication approaches, research investment, value chain enhancement, and social inclusion initiatives. Through regular meetings and transparent performance tracking, stakeholders work together to refine fee structures, ensuring fair cost distribution and effective waste management. Both PROs exemplify effective monitoring and enforcement practices within their respective contexts.

Switzerland serves as an exemplary model showcasing the government's pivotal role in monitoring, evaluating, and enforcing Extended Producer Responsibility (EPR) systems, epitomized by **Swiss Recycling** and its PET-Recycling Schweiz initiative, hailed as a beacon of success. Over three decades ago, beverage distributors in Switzerland established the PET beverage bottle EPR system, achieving remarkable results. This voluntary industry solution, covering 99% of the market, boasts the world's densest collection network, with approximately 70,000 collection points catering to 9 million inhabitants. Switzerland boasts an impressive PET bottle recycling rate exceeding 83%, reaching as high as 91% by EU standards, achieved at an exceptionally low cost of only 2 euro cents per bottle, compared to the European average of 7 cents per bottle in countries with deposit return schemes.

Switzerland's success lies in its cohesive approach, with the entire PET recycling supply chain unified under the industry organization, enabling the establishment of quality standards and innovative processes to enhance recycling efficiency. This collaborative effort ensures that the environmental benefits of PET recycling continue to grow, demonstrating that with the right regulatory framework and industry commitment, recycling loops can be closed efficiently and cost-effectively.

h) Preventing what is not necessary to be able to reduce the packaging put on the market

An effective PRO should encourage companies to assess if packaging is truly necessary or if alternative, more sustainable options like minimal or reusable packaging could be used instead, thus reducing unnecessary packaging on the market.

Ecoembes, in Spain, takes concrete steps to drive eco-design and foster sustainable packaging solutions among businesses. Ecoembes works closely with companies, offering comprehensive support and expertise to assess the viability of sustainable packaging options. Through tailored consultations and collaborative partnerships, Ecoembes guides businesses in adopting eco-friendly packaging practices that align with sustainability goals. For instance, Ecoembes facilitates dialogue with beverage companies to explore innovative approaches, like offering products in bulk or refillable containers rather than single-use packaging. This practical engagement empowers businesses to make informed decisions that minimize environmental impact while meeting consumer needs. Ecoembes' commitment to collaboration and innovation extends beyond theoretical discussions to tangible, real-world solutions. By working hand in hand with businesses, Ecoembes endeavors to significantly reduce unnecessary packaging entering the market, ultimately contributing to a more sustainable and circular economy.

To make packaging more sustainable and help companies to reach those goals, CONAI provides a "Design for Recycling" platform offering tailored guidelines for aluminium, steel, plastic, and paper packaging to optimize recycling processes and advance circular economy principles. "Design for Recycling" is actually a new open platform dedicated to specific topics within the realm of recycling-oriented design. The platform provides access to guidelines tailored for particular types of packaging, developed by a collaborative team comprising CONAI, Material Consortia, Universities, and Manufacturers.

Currently, the platform offers different guidelines:

- Guidelines aimed at facilitating the recycling of aluminium packaging. These guidelines analyse the sorting and recycling phases of aluminium packaging to identify key elements that should be considered during the design phase. The objective is to optimize recycling processes and minimize associated environmental impacts. The guidelines include design recommendations and considerations regarding packaging characteristics and recyclability for specific types of packaging.
- Guidelines for stell packaging which aims to provide useful design guidelines for designers and companies involved in the production and use of steel packaging in order to facilitate the recycling process.
- Guidelines intended to facilitate the recycling of plastic packaging. This resource examines each stage of sorting and recycling for plastic packaging, highlighting issues and peculiarities to provide effective design recommendations. Additionally, the guidelines are accompanied by two checklists to assist designers in creating more recyclable products.

- Guidelines available for enhancing the recycling of paper packaging. This publication outlines the recycling process for paper-based packaging, aiding in the formulation of design guidelines for paper and board packaging with recycling in mind.

These guidelines serve as crucial tools in advancing circular economy principles and achieving sustainable development objectives.

i) Improving the design for recycling and sustainability of packaging

Producer Responsibility Organizations (PROs) play a vital role in bridging the gap between the waste management sector's needs and packaging designers' perspectives, guiding them to create packaging that seamlessly integrates into the circular economy.

In Israel, **TAMIR**, the national recycling company, identified a key obstacle to effective recycling: confusion among residents about proper waste sorting. To overcome this challenge, TAMIR partnered with product and packaging designers to create clear and intuitive recycling symbols. These symbols categorize waste into three main bins: Orange for plastic, metal, and beverage cartons; Purple for glass; and Blue for paper and cardboard. To support widespread adoption, TAMIR developed a practical guide detailing the correct use of these symbols, addressing considerations such as placement, color, and size on various packaging types. These symbols have been officially registered and are now used exclusively by manufacturers and importers affiliated with TAMIR. As a result, thousands of product packages in Israel now display TAMIR's recycling symbols, reflecting a commitment to sustainability. To promote this initiative, TAMIR launched a creative advertising campaign featuring a popular comedian and Dedi the Recycling Cat. This campaign was rolled out across TV, digital platforms, and billboards nationwide. Additionally, TAMIR produced engaging social media videos, radio spots, and educational content in collaboration with schools and cooking shows. By embedding these symbols into the public's awareness, TAMIR not only facilitates more effective recycling but also enhances the environmental reputation of participating companies.

j) Influencing and steering the end of life treatment of packaging waste

An effective PRO collaborates with stakeholders to optimize the end-of-life treatment of packaging waste by identifying gaps, financing new technology, and ensuring efficient recycling. By influencing sorting and recycling operations, prioritizing high-performing recyclers, and optimizing plant locations, the PRO enhances both economic and environmental outcomes. PROs solely focused on financial contributions lack the ability to optimize the circular system's performance, highlighting the importance of proactive engagement in waste management processes.

For instance, **Fost Plus** in Belgium expanded collection to encompass all plastic packaging types and subsequently initiated the establishment of five new sorting

plants, capable of sorting 16 distinct fractions. Similarly, the collaboration between Austrian PRO ARA and German PRO Der Grüne Punkt GmbH led to the construction of a cutting-edge sorting plant near their shared border. This joint effort optimized capacity sorted new fractions into valuable materials and facilitated recycling.

In another exemplary approach, **EKO KOM** in Czech Republic is working closely with local authorities and waste management companies using, among other strategies, strong financial incentives to ensure that recyclates are produced which are meeting the demand of the market. Although the PRO is not allowed to own the waste, it can influence collection, sorting, and recycling to optimize circularity via contractual relations with the respective stakeholders, leaving concrete decisions to the market but resulting in a well-performing EPR system. The Czech example shows that PRO waste ownership as such is not a prerequisite to an effective and efficient solution, but the option for the PRO to be contractually directly involved in sorting and recycling is essential to its optimum role.

k) Running smart call for tenders

When overseeing system operations, the PRO should conduct tenders that consider economic and environmental factors. Adhering to public tendering rules provides guidance, and integrating environmental considerations ensures the most suitable bid is chosen for both economic and environmental benefits.

Fost Plus, the Belgian PRO, sets a benchmark for efficient tender processes that prioritize economic and environmental factors. With a commitment to sustainability at its core, Fost Plus meticulously designs tender processes that not only comply with public procurement regulations but also integrate rigorous environmental criteria. These criteria are carefully crafted to ensure that potential partners are evaluated not only on their cost-effectiveness but also on their ability to minimize environmental impact throughout the entire lifecycle of the packaging materials. By prioritizing sustainability in its call for tenders, Fost Plus seeks partners who share its vision of environmental stewardship. Partners selected for collection, sorting, and recycling operations undergo thorough evaluation to ensure they meet Fost Plus's high standards of efficiency and environmental performance. This includes assessing their capacity to maximize material recovery, minimize waste generation, and employ innovative technologies that reduce energy consumption and carbon emissions.

Fost Plus's commitment to sustainability extends beyond the selection of partners; it permeates every aspect of its operations. From optimizing collection routes to investing in state-of-the-art sorting facilities, Fost Plus employs a holistic approach to waste management that prioritizes resource efficiency and environmental responsibility. Through its rigorous call for tenders, Fost Plus not only drives innovation and efficiency within the waste management sector but also sets a precedent for other PROs worldwide. By balancing economic viability with environmental sustainability, Fost Plus demonstrates that it is possible to achieve both financial success and positive environmental outcomes in the realm of extended producer responsibility.

In 2024, there will be the eleventh edition of the "**CONAI** Call for Eco-design of Packaging in the Circular Economy – Enhancing the Environmental Sustainability of

Packaging", aiming to reward the most innovative and eco-sustainable packaging solutions introduced to the market in the 2022-2023 biennium. Eligible to participate are companies that have invested in activities focused on the environmental sustainability of their packaging by addressing at least one of the following areas: reuse, facilitation of recycling activities, use of recycled materials, raw material savings, savings of virgin raw materials, logistics optimization, simplification of the packaging system, and optimization of production processes. These solutions will be evaluated using the CONAI Eco Tool, which calculates the environmental benefits of the prevention actions implemented by companies on their packaging through a simplified LCA analysis, quantifying energy and water savings and CO2 emissions reduction. Both evolutions of existing packaging projects and new packaging for the company that demonstrate a lower environmental impact compared to the most commonly used packaging for the same application on the Italian market, based on the Eco Tool results, can participate. Additionally, the Eco Tool and case analysis will be validated by an independent certification body.

For the 2024 edition, CONAI offers a total prize pool of 600,000 Euros, allocated as follows:

- 550,000 Euros proportionally based on the scores obtained among all admitted cases;
- 50,000 Euros awarded by the Extended Technical Committee to cases distinguished by their innovative and design-driven approach in implementing one or more of the following eco-design areas such as reuse, facilitation of recycling and use of secondary raw materials.

In 2023, CONAI awarded 219 cases out of 373 submitted, with a total prize pool of 600,000 Euros, including 50,000 Euros in incentives for circular innovation. These 219 packaging innovation cases achieved an actual reduction in the environmental impact of packaging, quantified as a 30% reduction in carbon dioxide emissions, a 22% decrease in energy consumption, and a 19% water savings.

Following an extensive tendering process, **Fost Plus** has engaged five partners to construct the sorting facilities for the New Blue Bag initiative. These five state-of-the-art sorting centers are currently operational at the following locations: *Indaver (Willebroek), Prezero (Evergem), Sitel (Engis), Valtris (Charleroi), and Val'Up (Ghlin).* Traditionally, the blue PMD bag contained only two types of plastic – PET and HDPE bottles and containers. However, the inclusion of packaging materials such as polypropylene (PP), polystyrene (PS), PET trays, and films has significantly increased the complexity of the sorting process. To address this challenge, the new sorting centers integrate a wide array of both new and existing technologies, including drum sieves, wind shifters, and infrared cameras. This enables the sorting of PMD packaging into sixteen standardized fractions, ensuring readiness for subsequent recycling processes. Furthermore, these facilities are designed with inherent flexibility to accommodate future enhancements and expansions in collection methodologies. Since the beginning of 2023, opaque PET packaging has been segregated as a distinct stream, alongside colorless, blue, and colored PET bottles. Additionally, in response to the inclusion of beverage capsules in the PMD stream, an additional eddy current

separator has been implemented to capture small aluminum packaging. As recycling technologies and market demands evolve, the New Blue Bag initiative remains adaptable to incorporate additional packaging materials.

l) Ensuring a level playing field in case of competing PROs

In environments where multiple PROs compete for the same waste stream, ensuring a level playing field is paramount to prevent selective practices or exploitation of legal gray areas. This heightened competition often necessitates rigorous monitoring and enforcement to curb profit-driven behaviors such as loophole exploitation or standards lowering. Article 8a of the Waste Framework Directive underscores the importance of dedicated oversight bodies to uphold fair competition.

The Central Agency in Germany, known as the Zentrale Stelle Verpackungsregister (Central Agency Packaging Register – ZSVR), plays a pivotal role in ensuring compliance with the Verpackungsgesetz (Packaging Act) and fostering transparency within the packaging industry. Tasked with registering entities bearing producer responsibility, the ZSVR operates as a central hub for publicizing such entities and facilitating transparency through activities like data reporting. One of the core functions of the ZSVR is to monitor and enforce ecological objectives outlined in the Packaging Act, including compliance with recycling quotas. Through diligent oversight, the agency ensures that packaging materials are optimally reused and recovered, aligning with the overarching goal of waste reduction and sustainable resource management. A key aspect of the ZSVR's work involves promoting a level playing field among competing Producer Responsibility Organizations (PROs). In an environment where multiple PROs vie for control over waste streams, the agency prevents selective practices and exploitation of legal loopholes. By upholding fair competition, the ZSVR mitigates profit-driven behaviors that could compromise environmental standards. Furthermore, the ZSVR actively addresses challenges in recycling by assessing the suitability of packaging materials for high-quality recycling. Through collaborative efforts with stakeholders and regulatory bodies like the German Environment Agency (UBA), the agency evaluates recycling performance, identifies shortcomings, and devises strategies to overcome obstacles. Recent initiatives highlight the ZSVR's commitment to facilitating compliance for both domestic and international companies. The introduction of an English version of the catalogue of packaging subject to system participation exemplifies efforts to enhance legal certainty and accessibility for foreign entities operating in the German market. By providing clear guidelines and resources, the ZSVR ensures that all stakeholders can fulfill their obligations under the Packaging Act, thereby contributing to a more sustainable and equitable packaging landscape.

Beyond regulatory compliance, fostering collaboration within the industry is essential for collective progress. Despite the presence of three competing organizations in Bulgaria alongside **ECOPACK**, there are numerous areas where joint efforts benefit the entire sector. Recognizing this, ECOPACK has proactively spearheaded cooperative endeavors. By establishing a business association representing PROs and packaging recyclers, ECOPACK has played a pivotal role in consolidating industry efforts to tackle shared challenges and strategic decisions. This collaborative approach extends to advocacy for industry interests in governmental policies, regulations, and

overarching strategic initiatives, underscoring a unified stance towards industry advancement.

m) Tackling free riding with focus on online sales

To combat free riding, particularly in online sales, it's crucial to address direct-to-consumer transactions facilitated by marketplaces and fulfillment centers, especially those involving companies operating outside the country. These platforms often possess pertinent data and direct connections to non-compliant businesses, making them key players in enforcing EPR obligations or assuming responsibility if the original company fails to comply.

For instance, in **Germany,** platforms like *Amazon.de* are only permitted to facilitate transactions for businesses with German residents if those businesses can provide evidence of compliance with EPR regulations. Businesses may need to demonstrate registration with appropriate recycling schemes and fulfillment of their obligations for the products they sell. If a business cannot provide this evidence, the platform may suspend or ban their sales activities until compliance is demonstrated. This approach places the responsibility on businesses to prove compliance before conducting transactions through the platform, ensuring adherence to EPR regulations and preventing free riding.

Conversely, in **France**, online marketplace platforms like *Cdiscount* bear direct responsibility for ensuring compliance with EPR regulations for products sold on their platform. If a customer purchases electronic devices from a seller on the platform and the seller fails to fulfill their EPR obligations, the platform itself is required to cover the costs associated with recycling and waste management for those products. Even if the seller is non-compliant, the platform must ensure EPR obligations are met, either by facilitating proper recycling or by making payments to the appropriate recycling schemes. This approach holds platforms financially accountable for compliance with EPR regulations and incentivizes close collaboration with sellers to prevent non-compliance. These contrasting approaches highlight the importance of collaboration between platforms, regulatory authorities, and businesses to effectively address free riding and uphold EPR obligations in the context of online sales. By implementing clear enforcement mechanisms and accountability measures, countries can ensure fair competition and sustainable waste management practices in the digital marketplace.

EXPRA has co-signed a joint statement with consumer organisations, business and trade associations, NGO's, advocating for a level playing field for online marketplaces and more effective enforcement of EU regulations. The statement, addressed to President von der Leyen, highlights the urgent need to address legal and regulatory gaps affecting online trade through these platforms. It emphasizes that insufficient responsibilities and enforcement for online marketplaces compromise environmental protection, consumer safety, and fair competition within the EU internal market. The joint statement calls for online marketplaces to be recognized as economic operators and to be held accountable for product compliance. Key recommendations include enhancing obligations for online marketplaces, improving product traceability, and equipping customs authorities with better tools to combat illegal imports. This initiative underscores the importance of closing regulatory loopholes to ensure fair and sustainable practices in the digital economy.

n) Ambitious and clever policy targets are a necessity

Setting ambitious and strategic policy targets is essential for effective Extended Producer Responsibility (EPR) systems. These targets should be both challenging and realistic, aiming to enhance collection and recycling rates while improving environmental outcomes. Targets can be qualitative or quantitative, applied to product groups or individual categories, ensuring maximum effort without impractical expectations or unnecessary investment.

For instance, Iceland's EPR scheme, operated by the **Icelandic Recycling Fund (IRF),** is complemented by ambitious policy targets aimed at enhancing recycling rates and environmental performance. Producers and importers pay recycling fees to cover waste management costs, with fees adjusted to align with evolving environmental ambitions and recycling targets. For instance, recent adjustments include an increase in the fee for plastic packaging to incorporate separate collection efforts. Moreover, as of January 2023, producers are also responsible for the costs of cleaning up plastic products when they become litter, signaling Iceland's commitment to preventing waste and promoting sustainable practices.

o) Nation- respective region or province wide collection and “out of home” strategies

To ensure effective waste management, EPR legislation must prioritize uniform, high-quality collection services, considering local variations and avoiding experimental approaches. Collaboration between PROs, local authorities, and waste management firms is vital for addressing collection challenges promptly. Furthermore, expanding collection strategies to include locations such as offices, public areas, and travel destinations is crucial to prevent littering and meet public expectations.

Éco Entreprises Québec (ÉEQ) in Canada exemplifies effective management of curbside recycling by consolidating municipal organizations, streamlining collection and transportation, and reducing contracts to enhance service efficiency and reduce emissions. Since 2005, ÉEQ has represented producers in Québec, funding over $2 billion for local recycling systems. Designated as the PRO in charge of modernizing curbside recycling, ÉEQ will manage the system from collection to material ownership and traceability, incorporating best practices from EXPRA and addressing unique local needs.

In Belgium**, Fost Plus** has unified collection systems across regions through an Interregional Cooperation Agreement, simplifying processes and ensuring high participation and material consistency. Collected materials undergo uniform processing, with stringent sorting standards resulting in high-quality recycled products sought after globally.

Similarly, in the Czech Republic, **EKO-KOM** has overseen a significant transformation in sorting and recycling over nearly 30 years. Cooperation with municipalities and cities has ensured a robust collection network, with over 900,000 bins and containers for sorted waste across the country. Financial incentives for sorting lines and partnerships with municipalities and sorting operators have driven recycling efforts, leading to positive environmental outcomes.

p) Developing and implementing local and federal communication campaigns to motivate inhabitants to sort their packaging and to sort it in the right way

To foster a sustainable recycling society, authorities and EPR organizations must engage in effective communication campaigns at both local and national levels to encourage residents to sort their packaging correctly. Consumer understanding and involvement are essential for the success of selective collection systems, making it imperative for PROs to promote awareness and environmentally friendly behavior through educational programs. To raise public awareness about sorting in the right way, several members of our organization have implemented effective communication campaigns and initiatives.

TAMIR, in Israel, has established "Israel's Recycling Day" on December 8th annually, dedicating a day in the national calendar to promote recycling. In 2024, Israel will commemorate the 5th Recycling Day, showcasing TAMIR's commitment to increasing awareness and participation in recycling efforts. EKO-KOM in the Czech Republic has achieved significant success in sorting and recycling packaging through proactive engagement with the Czech population. Their EPR system includes a comprehensive awareness campaign and educational program, reaching over 2 million students in elementary schools. Additionally, **EKO-KOM's** waste sorting instructors actively participate in public events, further promoting the importance of recycling. Through various channels such as print and online media, social media, and public events, EKO-KOM continues to inform and educate the public about proper waste sorting practices. Furthermore, **ANDI (Visión 3030)** emphasizes consumer education as a core objective. Through B2B and B2C communication strategies, ANDI works to change consumer habits and behaviors, advocating for correct waste separation at the source. Their efforts contribute to a broader mission of promoting sustainability and responsible consumption. These examples highlight the importance of proactive communication and education in fostering a culture of recycling and sustainable waste management practices among communities.

For instance, **CONAI** places particular emphasis on local communication campaigns, especially those accompanying the introduction of new separate collection systems for packaging waste. Financial resources are available to support local communication efforts in municipalities that face challenges in quantitative performance or have initiated processes to improve the quality of their collections. Examples of such communication activities include:

- Transitioning to a "door-to-door" waste collection system
- Changing the material differentiation process, resulting in a new collection model, even if only in specific areas of the city

- Conducting general awareness campaigns for citizens

The emphasis that CONAI places on local communication is operationalized through the ANCI CONAI Local Communication Call for Proposals. This initiative, part of the AQ, supports municipal efforts to promote and inform the public about the separate collection of packaging waste.

Through the Call, individual or associated municipalities, governing bodies, and/or their delegated waste service managers can obtain co-financing for the implementation of locally developed communication projects. Published annually, the Call invites applications from across the country, categorizing them into three macro-areas: Northern, Central, and Southern Italy. Different budgets are allocated to each area, with generally higher budgets for the Central and Southern regions to support areas needing more assistance. Applications are submitted through a dedicated web portal and evaluated based on predefined rewarding criteria. Projects are then ranked within their respective macro-area based on the scores received, and are admitted for co-financing until the allocated budget for each area is exhausted. In the latest edition, 105 local communication projects were submitted: 34 from the North, 23 from the Centre, and 48 from the South.

q) Developing and running education initiatives and campaigns with tailor made approaches for kindgarden, primary and secondary schools and other specific groups and situations

Education initiatives and campaigns tailored to various age groups and specific situations are pivotal for nurturing environmental consciousness from early childhood. Initiatives such as **EKO-KOM's** ongoing awareness campaigns, reaching over 2 million students, exemplify effective engagement at the school level. Additionally, **ANDI Vision 3030** focuses on consumer education, employing B2B and B2C strategies to promote correct waste separation and recycling awareness. **TAMIR i**n Israel hosts live broadcasts for pupils in elementary school in collaboration with the Israeli Ministry of Education.

Producer Responsibility Organizations (PROs) also play a critical role in tackling littering issues. For instance, **TAMIR i**n Israel hosts educational events with the Ministry of Education, instilling values of environmental stewardship in students. Moreover, since January 2023, producers in Israel are responsible for the costs of cleaning up littered plastic products, incentivizing sustainable product design.

In Bosnia, **Ekopak** emphasizes the importance of public communication campaigns, leveraging TV, and radio to spread awareness about recycling. Similarly, **ECOPACK** in Bulgaria focuses on education through engagement in communication campaigns and collaborations with municipalities and NGOs. Through competitions and initiatives targeting specific waste streams, ECOPACK educates communities while driving collection rates and contributing to meeting recycling targets. Over the last 3 years the organization has been channeling campaigns to the specific waste streams in the focus of the Single Use Plastic directive - PET beverage bottles and aluminum cans. Since the directive came into force ECOPACK has conducted such separate collection competitions in 45 towns and in over 300 schools. Thus, the organization seeks to not

only educate and engage the kids, the families and local communities, but also collect real volumes of clean material contributing to meeting the targets.

In Italy, **CONAI** is dedicated to ensuring the nationwide recycling of packaging waste and has long been attentive to the educational needs of schools. In pursuit of this commitment, CONAI has partnered with the Corriere della Sera to launch the "Riciclo di Classe" (Class Recycling) project. This educational initiative aims to instill in primary school children responsible and mindful behaviors regarding separate waste collection and the recycling of packaging materials. At its core is "It Depends on Us," an engaging theatrical narrative that unfolds in an old country house, involving two children, a quirky adult couple, and the spirits of six packaging materials: Steel, Aluminum, Bioplastic, Paper, Wood, Plastic, and Glass—the true stars of the production. Through interactive and creative activities, children not only grasp the concept of transforming packaging into secondary raw materials for producing new goods but also appreciate the importance of eco-friendly actions. Most importantly, they have the opportunity to delve into the world of theater by staging the play, while simultaneously learning to translate their respect and care for the environment into tangible deeds. The "Riciclo di Classe" project has been incorporated into the "School Regeneration Plan," endorsed by the Ministry of Education, to support educational institutions in realizing the objectives of the 2030 Agenda and the National Strategy for Sustainable Development, as detailed in the attached communication. This environmental education initiative now enjoys visibility on the MIUR platform, where interested educators can access it. Starting from September, "Riciclo di Classe" activities, alongside other tools and resources provided by the "School Regeneration Plan," can be selected for inclusion in schools' educational offerings for the 2022-2025 triennium.

Rinki Ltd, the Finnish company specializing in the management of packaging waste, oversees the collection and recycling of used packaging materials throughout Finland. In collaboration with Tetra Pak Oy, Rinki launched the Carton Challenge in 2023 and 2024. This competition invites elementary school students to design clear and effective sorting instructions for Rinki Ecopoints.Each year, an award panel selects six winning schools from hundreds of participants. These winning schools receive prizes, and their sorting instructions are featured on Rinki Ecopoints' carton containers near the schools. For 2024, examples of award-winning designs include those from Viininjärvi School and Pajula School. Rinki believes these visual and cross-lingual instructions will significantly aid young recyclers in sorting their carton packaging effectively.

r) Special consideration of Commercial & Industrial packaging

While household packaging collection is typically coordinated with municipalities, commercial packaging is often managed through existing contracts between retailers, industries, and waste management companies. PROs focus on data collection and promoting separate collection of commercial packaging, alongside education and incentives to improve recycling practices.

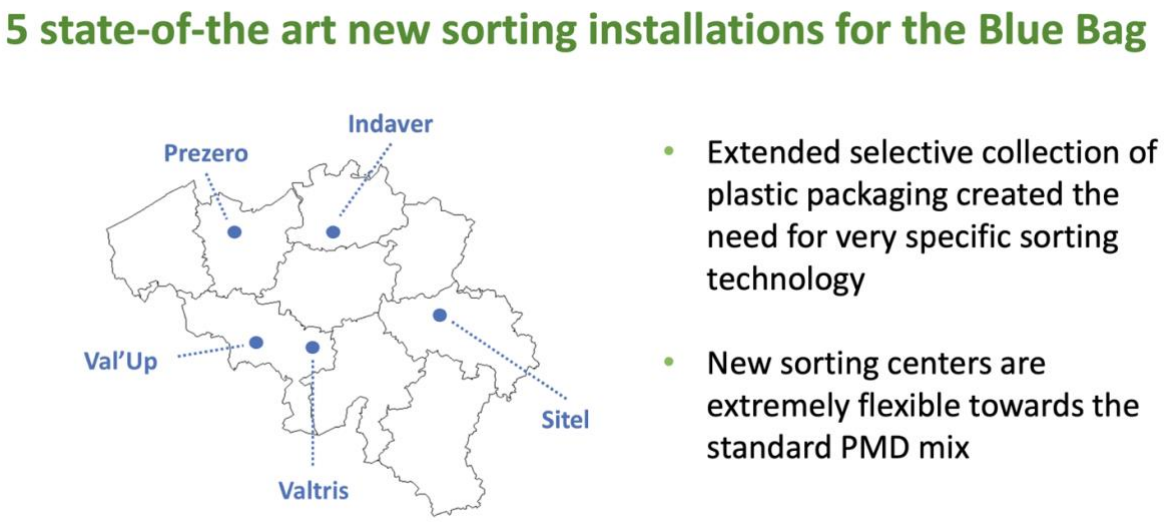
In Belgium, the management of commercial and industrial packaging waste falls under the purview of **VALIPAC**. VALIPAC is the leading organization responsible for coordinating the collection, recycling, and recovery of commercial and industrial packaging materials. Through partnerships with businesses, waste management companies, and government authorities, VALIPAC ensures that packaging waste generated by industries and commercial entities is collected separately and recycled efficiently. This proactive approach not only minimizes the environmental impact of packaging waste but also contributes to Belgium's broader sustainability goals. In Canada, particularly in the province of Quebec, **Éco Entreprises Québec (EEQ)** oversees the management of commercial and industrial packaging waste. As a Producer Responsibility Organization (PRO), EEQ works closely with businesses, municipalities, and recycling facilities to implement effective collection and recycling programs for commercial and industrial packaging materials. Through educational campaigns, incentive programs, and regulatory compliance, EEQ strives to increase recycling rates and reduce the environmental footprint of packaging waste in Quebec. The gradual transition towards the modernized EPR system in Québec will include the industrial, commercial, and institutional (IC&I) sectors, a first in the world, as well as multi-residential buildings and outdoor public spaces. ÉEQ has developed an action plan for canvassing and involving these new producers and stakeholders, which will be rolled out by 2030, when all sectors must be fully integrated.
In Italy, current regulations mandate that packaging producers must identify collection points for the disposal of used packaging, in coordination with the companies that utilize these packaging materials. In practical terms, this collaboration entails that users are responsible for collecting and transporting the packaging to the designated platform, while producers bear the responsibility for subsequent material valorisation. Within this framework, *Comieco, Corepla, and Rilegno*, through a specific agreement, have established a network of platforms nationwide capable of receiving packaging waste from industrial, commercial, artisanal, and service companies free of charge. This serves as an alternative to public collection services or other services provided by private companies. It's important to note that these platforms should not be confused with those where Consortia collect packaging waste from separate waste collection, as per the ANCI-CONAI Framework Agreement.

s) Enabling investments for a state-of-the-art infrastructure and facilitating innovation

PROs play a pivotal role in improving infrastructure for efficient waste collection, a critical aspect of enhancing packaging circularity. Technological innovations are

essential for advancing waste treatment processes, driving the transition to more sustainable practices. By supporting start-ups and testing novel concepts, PROs contribute to a dynamic and eco-friendly packaging ecosystem.

In line with this, **Fost Plus** has spearheaded efforts to modernize Belgium's recycling infrastructure by commissioning five new high-tech sorting centres strategically located throughout the country. These centres, operated by partners including *Indaver, Prezero, Sitel, Valtris, and Val'Up,* are fully operational and are capable of sorting the New Blue Bag, which includes a broader range of packaging materials, making the sorting process more complex. By leveraging a combination of new and existing technologies such as drum sieves, wind shifters, and infrared cameras, these sorting centres can efficiently separate PMD packaging into sixteen uniform fractions, ready for further recycling. Moreover, these facilities provide the necessary flexibility to adapt to evolving collection scenarios, allowing for the incorporation of additional packaging types in the future. Fost Plus's investment in these state-of-the-art sorting centres not only enhances Belgium's recycling capabilities but also creates new and sustainable job opportunities within the country's recycling sector, contributing to a dynamic and eco-friendly packaging ecosystem



Ecoembes, the leading PRO in Spain, spearheads infrastructure enhancements and technological advancements in packaging waste management. It collaborates with innovative firms to develop cutting-edge solutions for smart waste collection. Leveraging advanced technologies like artificial intelligence and data analytics, Ecoembes streamlines waste sorting and recycling processes, ensuring higher-quality recycled products. Additionally, the Spanish PRO invests in research and development initiatives to explore innovative approaches to packaging waste treatment, promoting circularity. Moreover, Ecoembes nurtures innovation by providing support to start-ups and entrepreneurs in the waste management sector. Through various programs and funding opportunities, Ecoembes empowers promising ventures to develop and scale their solutions. By fostering innovation and investing in state-of-the-art infrastructure,

Ecoembes drives the transition to a more sustainable packaging ecosystem, not only in Spain but also globally.

VALORLUX, a non-profit organization (ASBL) established in 1995 and authorized by the Luxembourg Ministry of the Environment, Climate and Biodiversity, initiated a project in 2023 aimed at advancing reuse solutions in Luxembourg: "*Spin – Reuse: easy to choose*!". The project sought to offer a market solution that would be user-friendly for the entire value chain, including consumers. Utilizing a digital infrastructure consisting of a client app, back-office systems, and partner apps, along with QR codes on each item, the system enabled real-time tracking of reusable items, facilitating efficient monitoring of their usage cycles. The pilot phase was launched with a reusable cup and corresponding lid, and after six months of testing, the project was temporarily paused as VALORLUX had gathered the necessary data and insights.

To navigate the complex landscape of packaging sustainability, producers and importers require comprehensive information, insights, and practical guidance. Established in 2013, the **Netherlands Institute for Sustainable Packaging (KIDV)** was founded to address these needs. Initially focused on major issues such as the collection of beverage cartons, reduction of plastic bag use, and optimization of the plastic packaging value chain, KIDV's research laid a strong foundation for its work. Since 2018, KIDV has shifted its focus toward directly assisting producers and importers in enhancing the sustainability of their packaging. This support has evolved through personalized consultations and the development of practical tools designed for independent use by companies. Since 2024, KIDV has operated as an independent division within the Dutch PRO **Verpact**, specifically catering to the needs of packaging producers and importers.
The KIDV portfolio includes several key tools:
- Recyclechecks: This tool provides insights into the circularity and environmental impact of packaging types.
- Sustainable Packaging Compass: Assesses not only recyclability but also provides insights into the circularity and environmental impact of various packaging types.
- Calculation Tool for Reusable Packaging: This tool assesses the feasibility of transitioning from single-use to reusable packaging.
- SUP-decision-tree: This resource helps clarify the complexities of Single-Use Plastics (SUP) legislation in the Netherlands
Through ongoing collaboration with stakeholders across the packaging value chain—including raw material suppliers, packaging producers, brand owners, retailers, sorters, recyclers, municipalities, and policymakers—KIDV continually updates and refines these tools. Their goal is to empower companies to make informed, sustainable choices.

In Norway, **Grønt Punkt Norge,** prominent Norwegian PRO established in 1996, has significantly advanced this agenda through substantial investments in cutting-edge sorting technologies. Noteworthy achievements include high-tech sorting systems for glass and metal, and the establishment of a joint collection system for all fiber packaging types—such as paper, cardboard, beverage cartons, and corrugated board—from households. This infrastructure supports industrial automatic sorting, which enhances the efficiency and effectiveness of recycling processes.

A recent example of their innovation is the ROAF plant, which specializes in sorting plastic packaging from residual waste (see more at ROAF). This facility underscores Norway's forward-thinking approach to waste management, embracing central post-sorting technology. This contrasts with the more traditional separate collection methods prevalent in many other countries. By adopting such progressive technologies and practices, Green Dot Norway demonstrates how PROs can lead in creating a more sustainable and circular waste management system.

t) Evaluating, understanding and improving the carbon emission effects

An effective PRO evaluates and understands the carbon emission impacts of recycling versus using virgin materials in packaging production. By assessing operations, it calculates emissions saved versus those generated in collection, sorting, and recycling. Additionally, it identifies opportunities to further reduce negative emissions and determine optimal recycling routes. This becomes increasingly crucial as chemical recycling may play a significant role in recycling plastics, particularly for food packaging.

For instance, the assessment of environmental performance holds even greater strategic significance today, fostering data management and reporting activities as essential organizational assets. **CONAI** integrates all accountability endeavours as a core component of its strategy, deriving environmental data through a Life Cycle Costing (LCC) methodology and internationally reporting management, environmental, and socio-economic performance via the Green Economy Report (GER), an innovative reporting model developed by the Foundation for Sustainable Development. The document provides a thorough examination of performance across three levels – National System, CONAI System, and Organization – clearly delineated in various sections for the year 2022. Prepared in accordance with the GRI (Global Reporting Initiative) standard under the "GRI-with reference to" option, the Report adheres to rigorous reporting standards. Furthermore, efforts persist in constructing processes and aligning with the stipulations of *Legislative Decree 254/2016 (Non-Financial Declaration),* with special attention to the *new Directive (EU) 2022/2464 of December 14, 2022 (Corporate Sustainability Reporting Directive*) and the introduction of the concept of double materiality. This year's report is enriched by an in-depth exploration titled "Scenarios and Prospects for Sector Decarbonization," developed in collaboration with Italy for Climate. Documented engagement with Governing Bodies and Management occurred across multiple phases, and the report underwent technical assurance by RINA Services S.p.A. throughout 2023.

Since 2019, **Rinki,** the Finnish company, has integrated emissions reduction into its subcontractor evaluation program. Transportation subcontractors can earn a 3-5% higher compensation by employing emission-friendly methods for collecting and transporting packaging waste from Rinki's Ecopoints. The program supports the use of environmentally friendly fuels, including biodiesel, biogas, and electricity. In 2023, 54% of the total packaging waste collected from Rinki's Ecopoints was transported using these eco-friendly fuels, achieving a 90% reduction in emissions compared to fossil fuels. Moving forward, Rinki aims to further decrease emissions associated with packaging waste transportation from its Ecopoints.

In line with evaluating and understanding carbon emission impacts, EXPRA has undertaken initiatives to **assess the CO2 savings** achieved through packaging waste recycling in its member countries. The assessment aims to provide a clearer picture of the environmental benefits of recycling compared to the use of virgin materials. By analyzing data collected from various sources, including member feedback and established models, EXPRA is able to estimate the overall reduction in CO2 emissions in EXPRA's countries. Although some challenges arise due to the variability in data collection and calculation methods across different systems, the results highlight the positive role that recycling plays in reducing carbon emissions. These efforts contribute to the broader understanding of the environmental impact of packaging waste management and support ongoing improvements in sustainability practices. Going forward, EXPRA will continue to refine its methodologies to provide more accurate and comprehensive data on CO2 savings, helping guide future strategies in achieving climate targets.

u) Harmonizing EPR legislation with DRS collection systems

Integrating EPR with DRS presents challenges due to their differing focuses and infrastructures. While EPR handles all packaging, DRS centers on specific types like beverage containers. Harmonizing these systems is vital to prevent redundant investments, maintain EPR efficacy, and reduce administrative burdens. Innovative approaches like Digital DRS offer potential solutions by combining rewards with existing infrastructure, minimizing duplication of efforts and costs.

In Belgium, **Fost Plus**, the leading waste management organization, is pioneering a revolutionary approach to packaging waste management with its "Together for a Smart Deposit Scheme" initiative. Launched in June 2023, this initiative aims to integrate the Digital Deposit Return System (DDRS) with existing Extended Producer Responsibility (EPR) infrastructure, offering a modern solution to traditional deposit return systems (DRS). Unlike conventional DRS models, which depend on physical deposit machines, the Digital DRS leverages advanced digital technologies to streamline the collection process. By allowing consumers to receive deposit refunds electronically, this approach eliminates the need for physical return points, thereby reducing infrastructure costs and minimizing the environmental footprint of collection operations. The Digital DRS aims at enhancing consumer convenience but also optimizing resource utilization within the existing EPR networks, aligning with sustainability and circular economy principles. The initiative involves a series of pilot projects designed to test the feasibility and effectiveness of this innovative system. Key elements under evaluation include the use of unique codes on packaging, the functionality of a user-friendly app, and the robustness of systems for fraud prevention and data protection. Initial tests are being conducted in controlled environments such as Corda Campus in Hasselt and KBC in Leuven. Subsequent phases will extend the testing to semi-open and open environments to assess the system's impact on litter and its usability among diverse demographic groups.

v) EPR is not a stand-alone policy principle

EPR is not a stand-alone policy principle; rather, it works best when implemented alongside complementary measures. A single policy measure rarely achieves the stated waste management goals. Thus, a mix of policy measures, including Pay-As-You-Throw (PAYT), landfill bans or taxes, local statutes to encourage waste sorting, and separate collection of other municipal waste streams (especially biological waste), should be introduced alongside EPR to ensure maximum performance.

For instance, in **the Netherlands**, municipalities have implemented PAYT systems to encourage waste reduction and proper waste management. One example is the municipality of Amsterdam, where residents are charged based on the amount of waste they produce. Each household is provided with specific waste bags, and residents are required to purchase additional bags if they exceed their allocated quota. This system incentivizes waste reduction and encourages residents to recycle more effectively.

w) Integration of the informal sector

In countries lacking structured waste management systems, the informal sector assumes a pivotal role in waste collection, often serving as a source of livelihood for unemployed individuals. Ensuring the seamless integration of the informal sector into EPR systems is imperative to mitigate conflicts and ensure their meaningful participation in the new waste management paradigm.

Colombia exemplifies the significance of the informal sector in waste management, particularly as formal systems continue to evolve. Organizations like **Visión 3030 - ANDI** underscore the necessity of incorporating the informal sector into EPR frameworks. For instance, established in 2019, Visión 3030 - ANDI represents over 350 members in Colombia and heavily relies on the informal sector as the cornerstone of its EPR system. By engaging collectors from the informal sector, Visión 3030 - ANDI gathers crucial data on collection points, sorted materials, and transformation quantities. Moreover, Visión 3030 - ANDI pioneers a Framework for formalizing and professionalizing waste pickers within EPR systems, underscoring the collaborative approach essential for successful waste management initiatives.

x) Controlling vertical integration not to damage the EPR system

Vertical integration within Producer Responsibility Organisations (PROs) offers both opportunities and risks. While it can enhance efficiencies, it also poses threats like unfair competition and information leaks. In Estonia, Romania, and Slovenia, vertical integration has led to market dominance and diminished waste management capabilities. Conversely, Czechia and Slovakia, where vertical integration is limited, have avoided such pitfalls.

Czechia stands as a testament to effective waste management, exemplified by the performance of **EKO-KOM**, its leading PRO. Despite restrictions on vertical integration, EKO-KOM has achieved remarkable success in packaging waste management. Through innovative strategies and collaborative efforts, EKO-KOM maintains high recycling rates, sidestepping the market dominance issues seen in vertically integrated systems like those in Estonia, Romania, and Slovenia.

y) Compensation of necessary costs for the use of (municipal) infrastructures and operations

Compensation of necessary costs for the use of municipal infrastructures and operations is a crucial aspect of effective EPR systems. **ÖKO-Pannon,** in Hungary, established in 1996 by leading packers and fillers, exemplifies best practices in this regard. They determined necessary costs through agreements with Associations of Local Authorities, ensuring fair compensation directly to waste management companies. Additionally, ÖKO-Pannon's ownership structure, where they are the sole contracting party but do not own collected materials, mitigates financial risks and aligns compensation with fluctuating secondary raw material prices.

Similarly, **ENVIPAK** manages collected municipal waste effectively by owning both packaging and non-packaging household waste. This ownership enables ENVIPAK to monitor secondary raw material markets, manage costs, and ensure sorting quality by collection companies. Harmonization of waste system requirements, as demonstrated by ENVIPAK's approach, maintains convenience and consistency for inhabitants across the country, enhancing overall system effectiveness.

Independence and cost-effectiveness are also vital considerations. **ECOPACK,** a non-profit organization, efficiently manages curbside bins in 96 municipalities, covering 2.5 million inhabitants. Through partnerships with private subcontractors, ECOPACK maintains control over material flows and costs, maximizing economies of scale and reinvesting revenues for ecosystem development.

z) National Collaboration Among PROs Across Various Waste Streams Under EPR

In Belgium, a notable example of effective national collaboration among Producer Responsibility Organizations (PROs) is the **Round - The Belgian Recycling Coordination**: ROUND - Belgian Recycling Coordination
This program exemplifies how PROs managing different waste streams—such as packaging, Waste Electrical and Electronic Equipment (WEEE), and batteries—can work together within a single country to enhance waste management and recycling efficiency. ROUND facilitates cooperation between these diverse PROs to streamline processes, share best practices, and optimize resource use. By integrating efforts across various waste streams, the initiative aims to reduce administrative overhead, improve waste collection systems, and drive more effective recycling outcomes. This national-level collaboration not only strengthens the overall waste management framework but also supports the goals of Extended Producer Responsibility (EPR) by creating a more cohesive and efficient approach to handling different types of waste. The success of ROUND underscores the value of coordination among PROs to address complex waste management challenges within a single country.

Conclusion

This document has outlined the core principles and practices of Extended Producer Responsibility (EPR) as embraced by EXPRA, emphasizing its pivotal role in fostering sustainable packaging and enhancing waste management systems. EPR, as a strategic resource management tool, assigns responsibility for the lifecycle of products—ranging from design to disposal—to producers. This approach not only incentivizes the development of eco-friendly packaging but also promotes a circular economy where resources are continuously reused and recycled.

EXPRA's comprehensive analysis of its 33 member Producer Responsibility Organizations (PROs) reveals that successful EPR implementations are underpinned by several key factors. These include clear allocation of responsibilities among stakeholders, effective governance and transparency, and the use of eco-modulation in fee structures. By integrating these best practices, PROs can significantly improve waste management systems, leading to higher recycling rates and reduced environmental impact.

The four major objectives of EPR—sustainable production and consumption, incentivizing eco-design, full internalization of environmental costs, and enhancing circularity—are integral to achieving a balanced and effective waste management strategy. EPR systems not only support resource efficiency and recycling but also ensure that environmental costs are reflected in product pricing, thereby encouraging more sustainable consumer choices.

The document also highlights the importance of national-level collaboration among PROs managing various waste streams. Such collaboration enhances the coherence of waste management systems, reduces inefficiencies, and optimizes the use of resources. By aligning strategies and sharing best practices, PROs can tackle common challenges such as reducing landfill waste and improving recycling processes. This collaborative approach fosters a more integrated waste management infrastructure, driving progress towards a circular economy.

Furthermore, the evidence presented from climate impact assessments underscores the significant role of EPR systems in reducing CO2 emissions. The data gathered through EPR schemes demonstrates that effective recycling can lead to substantial reductions in carbon footprints, reinforcing the need for continued investment in and improvement of EPR practices. The estimated reduction of 59.2 kg of CO2 equivalent per person annually highlights the tangible climate benefits of robust EPR systems.

EXPRA's extensive research and the shared experiences of its members provide valuable insights for other countries and organizations looking to implement or enhance EPR systems. By adopting the best practices identified in this document, stakeholders can improve their waste management systems, support sustainable packaging solutions, and contribute to a more circular and climate-conscious economy.

In conclusion, EPR stands as a fundamental component of modern waste management strategies, driving progress towards sustainability and resource efficiency. The principles and practices detailed in this document, supported by the successful experiences of EXPRA members, offer a solid foundation for advancing EPR initiatives globally. By embracing these practices and fostering continued innovation and collaboration, we can achieve significant environmental benefits and move closer to realizing a truly circular economy.