



Reimagining reuse for the circular economy of glass

Stakeholder Perspectives Series

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CHAIRMAN AND CEO, VERALLIA GROUP



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**ACKNOWLEDGMENTS
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Michel **GIANNUZZI**
Chairman and CEO, Verallia



FOREWORD

Reuse needs to be part of the answer for the future of the glass industry

The biggest challenge for the glass packaging industry today is our CO₂ emissions. On the journey towards carbon neutrality, we also need to be much smarter still about the recycling and reuse of glass. We must drive a dual-track approach; always looking for means to reduce emissions, while looking for the most effective ways to reuse and recycle our products. We want to make the circular economy of glass a reality and I believe reuse is an integral part of this strategy. To leverage opportunities for greater sustainability going forward, we need to understand the various complex challenges around glass reuse: from changing consumer behaviours and relevant product design, to the logistics of glass collection and cleaning, and developing new business models for reuse in different policy environments across our markets.

We want to raise the bar for the industry. In 2020, we set out three commitments to 'Reimagine Glass for a Sustainable Future'.* Part of this commitment is to help make reuse viable for the planet, people, and the glass packaging industry. In

“

As glassmaking experts, we cannot afford to be smug about producing an infinitely recyclable material. That's a great starting point for our industry. But glass is only sustainable when it is reused when and wherever possible and then does, in fact, get recycled.

this context, Verallia can act as an agent for change — we can bring our considerable glassmaking expertise and drive for innovation to bear on the design and implementation of new reuse systems and the continued improvement of existing ones.

We have gained significant experience in some of our key markets, including in Germany where reuse is a well-established practice and in Brazil where it continues to be commonplace. It is our deep conviction that reuse can only be a viable model if it is understood and addressed as a systemic challenge, which requires us to work closely with all stakeholders across the entire ecosystem. Together with partners and collaborators, as well as constructive critics, we can develop sustainable local reuse solutions and explore opportunities for replication and scale wherever it's possible.

In 2020, we announced that we would start our explorations on reuse with a first pilot project in France; today, we are already thinking differently about our approach. One pilot in one geography is not going to get us where we need to be at the speed required. We want to test and experiment to identify what works and what doesn't, to draw important comparisons and contrasts to accelerate learning we can share. We are thinking of this effort as the 'Reuse Lab' and we look forward to inviting as many of you as possible into this effort.

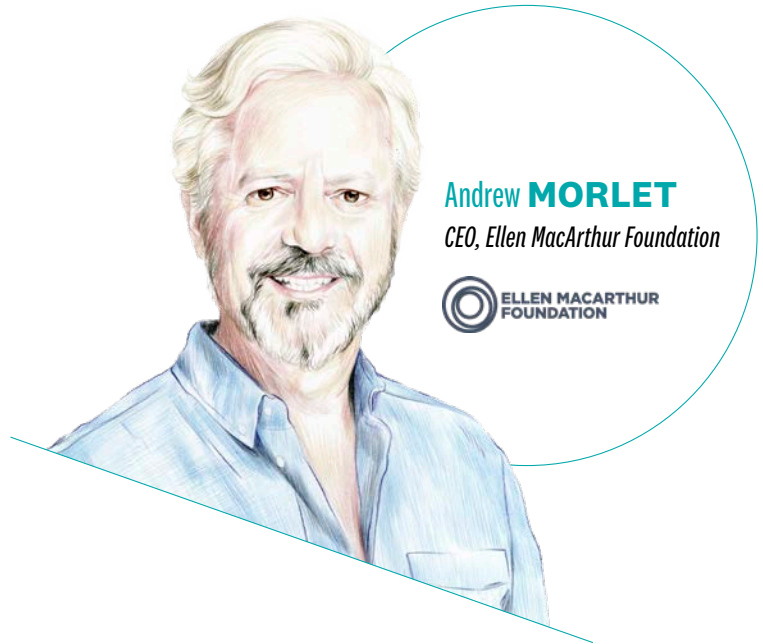
The future demands of us and our industry a new flexibility — the transition towards sustainable packaging will be an incremental process and we won't get everything right the first time, but it is through collaborative thinking and cumulative trials and successes that we can accelerate change. This paper brings together the state of the field on reuse through a range of perspectives at an important juncture for our industry. Opening dialogues with organisations and individual experts with different vantage points on the challenge has been immensely valuable for us at Verallia as we determine our next steps. I hope this series can offer the basis for wider conversation and collaborative action over the coming years. ●

* Verallia (2020), External Launch of our Purpose, available at: <https://www.verallia.com/en/communique-de-presse/lancement-externe-de-notre-raison-detre/>

Reuse is a key step for making a circular economy for packaging a reality

“

We cannot simply recycle our way out of this issue. Reimagining how we bring products to people without relying on single-use packaging is a crucial part of the solution.



Reusable packaging is a significant business opportunity. It offers the chance not only to reduce resource use, but also to build brand loyalty, improve user experiences, and optimise operations. But the greatest potential exists by viewing reuse as part of a bigger picture. Reuse models — for both packaging and products — lie at the heart of a circular economy, a framework to tackle global challenges including climate change at their root. Beyond a necessary energy transition, a fundamental change in the way goods are made and used is required to meet climate targets. If we eliminate waste, circulate products, and regenerate nature (the three principles of a circular economy) we can drastically reduce greenhouse gas emissions (GHGs)⁽¹⁾ and help halt and reverse biodiversity loss.⁽²⁾

The circular economy goes to the heart of our systems of consumption and production and represents a multi-trillion-dollar opportunity for businesses in the shape of new revenue streams, reduced material costs, and energy savings. Realising this enticing set of benefits rests on fundamentally rethinking business models so they do not create waste in the first place. To achieve this vision, innovation at the design stage of a product — solving the problem upstream — is necessary.⁽³⁾ This requires a shift in mindset, moving well beyond incremental improvements to the current system. It presents an opportunity to think about packaging not as something that should simply be

as functional and attractive as possible for one short use, but as something that has value for many users over time and can always be fed back into the economy. Innovative reuse models can tap into shifting user preferences by, for example, delivering better-looking, more functional packaging that gathers valuable intelligence and allows the user to customise the product. Some good examples of reusable packaging are featured in the Ellen MacArthur Foundation’s ‘Reuse — rethinking packaging’ report.⁽⁴⁾

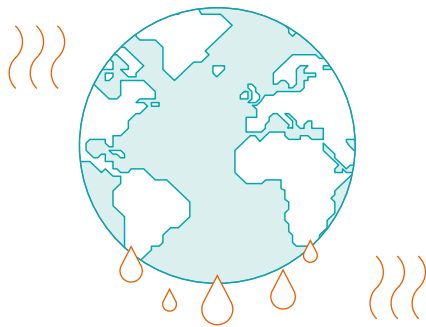
Switching to reusable packaging often presents challenges to the accepted ways of operating. To succeed with this kind of innovation, organisations need internal change agents with ideas that push the boundaries. Companies pioneering upstream innovation have a culture that supports these intrapreneurs to envisage ways to create better products or reach new markets, even when it conflicts with existing business priorities. ●

1. Ellen MacArthur Foundation (2021), Completing the picture: How the circular economy tackles climate change, available at: <https://ellenmacarthurfoundation.org/completing-the-picture>
 2. Ellen MacArthur Foundation (2021), The Nature Imperative: How the circular economy tackles biodiversity loss, available at: <https://emf.thirdlight.com/link/bgx12mlprld-v7i2m6/@/preview/1?o>
 3. Ellen MacArthur Foundation (2020), Upstream Innovation: A guide to packaging solutions, available at: <https://ellenmacarthurfoundation.org/upstream-innovation-a-guide-to-packaging-solutions>
 4. Ellen MacArthur Foundation (2020), Reuse - rethinking packaging, available at: <https://ellenmacarthurfoundation.org/reuse-rethinking-packaging>

Facts and figures shaping the conversation on reuse today

[For list of full sources, see p. 45]

THE CHALLENGE IN THE WORLD



Exceeding 1.5°C

Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in greenhouse gas emissions occur.

[IPCC 6AR report, 2021]

51 BT CO₂eq

The average greenhouse gas **emissions added to the atmosphere every year.**

[Breakthrough Energy, 2021]

BT: billion tons
MT: million tons

18 BT CO₂eq

One third of annual global greenhouse gas emissions come from the **world's food systems.**

[UN Food & Agriculture Organisation, 2021]

900 MT CO₂eq

of global emissions are due to **packaging** - more than any other **food system supply-chain factor.**

[UN Food & Agriculture Organisation, 2021]

86 MT CO₂

Worldwide, **glass manufacturing** produces at least 86 million tonnes of CO₂ every year.

[nature, 2021]

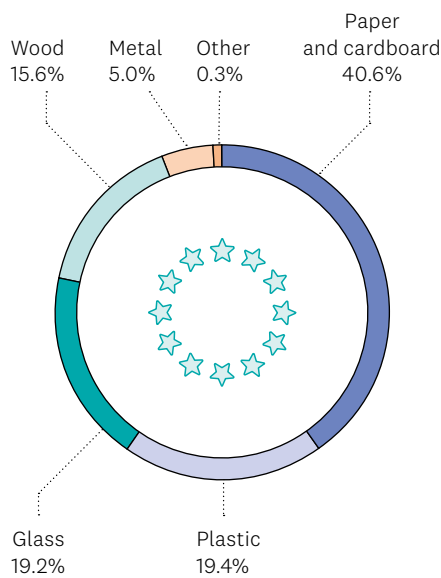


+ 70%

Global solid waste generation is predicted to go up by 70% by 2050 - from 2.01 billion tonnes in 2016 to 3.5 billion tonnes.

[World Bank, 2018]

Packaging waste



Packaging waste generated in the EU in 2019, by packaging material.

[Eurostat, 2021]

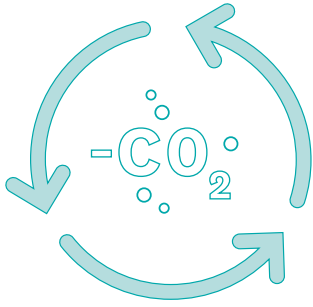


+ 20%

Increase in **packaging waste** generated in the EU between 2009 (66 million tonnes) to 2019 (79 million tonnes). Even when accounting for population growth, packaging volume generated per capita over the same timeframe increased by 18%. [Eurostat, 2021]

REUSE AS PART OF THE SOLUTION

Reusing glass

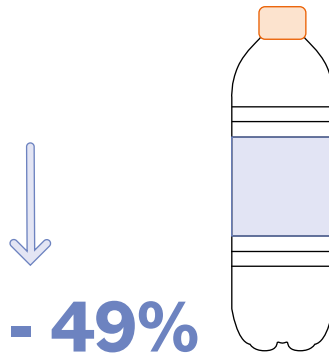


- 80.5%

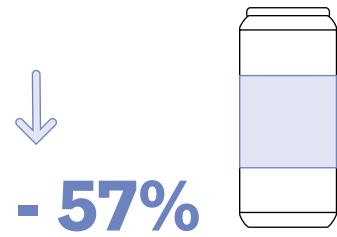
Reduction in CO₂ emissions from glass production after a bottle has been **reused 20 times**.
[Zero Waste Europe, 2020]

Reusable glass bottles vs. single-use glass bottles presented the most significant decrease in CO₂ emissions from all packaging. Single-use glass has the highest overall impact compared to any other packaging materials. This is attributed to the glass production phase. However, global warming potential reduces with the number of times a glass bottle is reused.

[Zero Waste Europe, 2020]



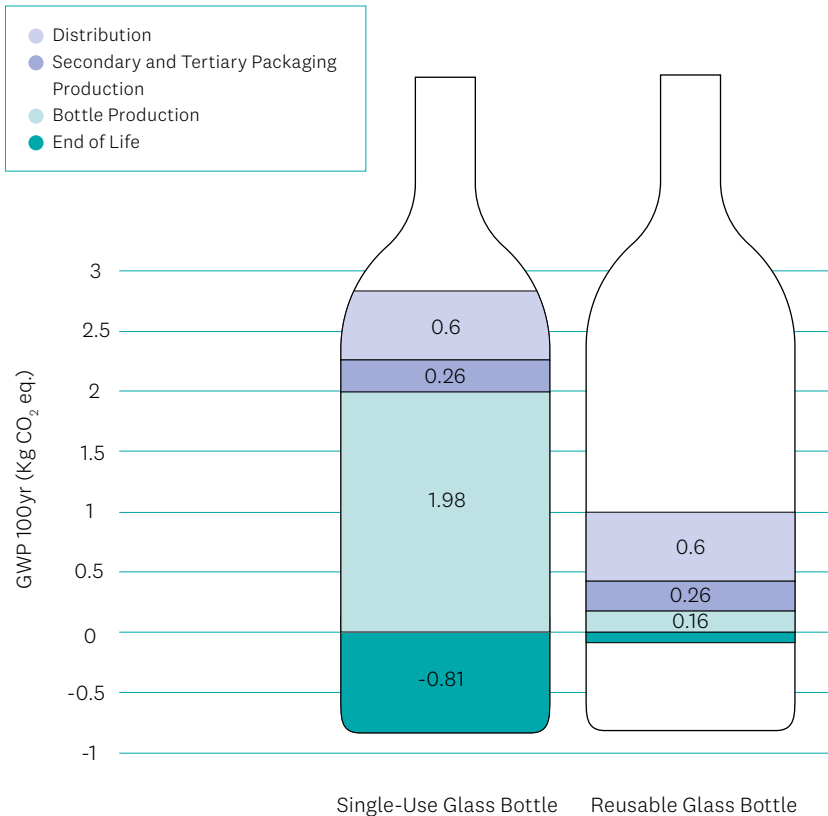
Reduction in CO₂ emissions from a **reusable glass bottle versus single-use PET**, based on 20 cycles.
[Zero Waste Europe, 2020]



Reduction in CO₂ emissions from a **reusable glass bottle versus single-use aluminium can**, based on 20 cycles.
[Zero Waste Europe, 2020]

Emissions by stage of life-cycle

Based on a 75cl bottle of wine [Zero Waste Europe, 2020]



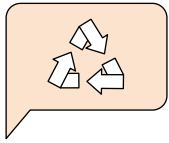
x 23-50

Is the estimated average number of rotation trips for glass bottles, when reused in an optimised system with a return rate of more than 97%.

[FFACT and TPC360 for FEVE, 2021]

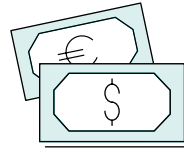
CONSUMER EXPECTATIONS

Demand for sustainable design



83%

of global consumers believe it's important or extremely important for companies to design products that are meant to be reused or recycled.



+50%

And more than half said they would pay more for these packaging options.

[Accenture, 2019 – survey of 6,000 consumers in 11 countries across North America, Europe and Asia]

Perceived sustainability

Consumer perception around the world is less aligned on what packaging substrates are most sustainable, but more aligned on the least sustainable options.

[McKinsey & Co., 2020, Survey of approximately 10,000 global consumers]

How sustainable do you think each of these packaging types is?

	United States	United Kingdom	France	Germany	Italy	Japan	China	India	Indonesia	Brazil
Paper-based cartons	1	2	4	3	3	4	4	1	4	5
Glass bottles and jars	2	1	1	1	1	6	6	3	7	7
Plastic films made from renewable, compostable raw materials	3	4	2	2	2	1	1	4	1	1
Flexible paper	4	3	5	4	6	5	5	2	5	6
Plastic bottles and containers that are fully recyclable	5	5	3	6	4	2	2	5	2	3
Plastic films that are fully recyclable	6	7	6	5	5	3	3	6	3	2
Metal containers	7	6	7	8	8	8	8	7	8	8
Plastic bottles and containers made from recycled plastic material	8	8	8	7	7	7	7	9	6	4
Aluminum foil wraps	9	9	9	9	9	9	10	8	9	9
Packaging combining plastic, paper, and aluminum foil	10	10	10	10	10	10	9	10	10	10

Packaging substrates ranked by number of respondents who indicated "extremely" or "very" strong

■ Ranked top 3 □ Ranked 4-7 ■ Ranked lowest 3

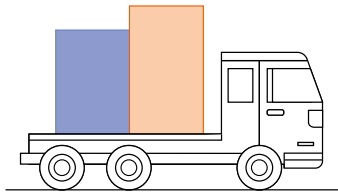
THE REUSE OPPORTUNITY

\$630 bn
cost savings

By adopting circular economy principles, a subset of the EU manufacturing sector alone could realise net materials cost savings worth up to \$630 billion per annum. [Ellen MacArthur Foundation, 2020]

78%

In 2019, 13.7 million tonnes of glass bottles and jars were collected in the 28 EU member states, amounting to a **78% collection rate for recycling**. This is an increase from 76% in 2018. [FEVE, 2018]

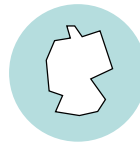


90%

The **EU glass industry** has set itself a target of 90% glass collection rate for recycling by 2030. [Close the Glass Loop, 2020]

6-7%

The **share of refillable glass packaging** produced and sold annually by the FEVE's (European Glass Container Federation) 145 members in the period of 2017-2019. [FFACT and TPC360 for FEVE, 2021]



42%

of **beverages consumed in Germany** in 2019 were packaged in reusable packaging. This is an increase of 0.6% from the previous year and marks the first increase in share of reusable packaging since 2003. [Umwelt Bundesamt, 2019]

Reuse targets

are being set around the world, alongside single-use plastic bans : [Greenpeace, 2021 – unless stated otherwise]



Australia

100% of packaging must be reusable, recyclable or compostable by 2025. [Zero Waste City, 2020]

Austria

Beverage packaging reuse quota of 25% by 2025.

Chile

30% of bottles for sale in supermarkets must be returnable for reuse.

Germany

70% of beverage containers must be reusable by 2022. [Food Packaging Forum, 2019]

France

Reaching 5% of reused packaging on the market by 2023 and 10% by 2027.

India

Ban on all single-use plastic items from 1 June 2022. 100% of plastic packaging to be reusable or recyclable by 2030.

The Netherlands

70% of beverage containers must be reusable by 2022. [Ellen MacArthur Foundation, 2021]

Portugal

30% of all packaging put on the market, of any material, must be reusable by 2030

Romania

5% annual reusable packaging increase until 2025, reaching a minimum of 25% by 2025.

South Africa

100% of plastic packaging must be reusable, recyclable or compostable by 2025. [Ellen MacArthur Foundation, 2021]

South Korea

Phase out single-use plastic products by 2027. [Ministry of Environment, 2021]

UK

100% of plastic packaging must be reusable, recyclable or compostable by 2025. [Ellen MacArthur Foundation, 2021]

Reuse Stakeholder Perspectives Series

UNDERSTANDING THE CHALLENGES, SPOTTING THE OPPORTUNITIES

With the packaging waste problem continuing to grow at speed around the world today, focusing on reuse as part of the solution has never been so urgent.

Reuse is an integral part of the circular economy of glass, but what will it take to make glass reuse a viable solution for business, for people, and for the planet in today's world?

Making glass packaging reusable and doing so at scale is a complex and multi-dimensional undertaking. It requires bringing together the complementary expertise and know-how of various stakeholders — from producers and retailers, to local governments, NGOs, and reuse start-ups, as well as glass packaging manufacturers. From a business perspective, the challenge is to re-think an entire value chain built for, and around, single-use products. From a consumer perspective, it is about enabling people to build meaningful habits

in their everyday lives, as they (re)discover the idea of reuse. To help us all better understand the different dimensions of the reuse challenge and spot the opportunities, we have asked different actors across the ecosystem to share their views and experience on developing and expanding packaging reuse loops. A complex picture emerges, but so does a set of interlinked action areas for closer consideration as we work together to find more and new ways of making glass reuse viable at scale.

The following **seven action areas for scaling up glass reuse** can offer us a structure for a dynamic and inclusive debate.

We hope this edited series of short interviews and opinion pieces allows everyone to discover something new and encourages many of us to lean into the creative tensions of the reuse question in further conversations.



– THIERRY RAYNA –

*Professor of Innovation Management,
École Polytechnique and Institut
Polytechnique de Paris*

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**Glass reuse in
the future may need to look
significantly different**



– BJÖRN KNOOP –

*Head of Corporate Communication
and Sustainability, fritz-kola*

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**Glass reuse at the core
of our business model**



– VIRGINIE HELIAS –

*Chief Sustainability Officer,
Procter & Gamble*

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**We need innovation
to make reusable
products irresistible**



– TOM SZAKY –

*Founder and CEO,
TerraCycle & LOOP*

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**Returning any
product anywhere:
How reuse can
become the norm**



– HANS BAXMEIER –

*Managing Director, GeMeMa – Gesellschaft für
Mehrwegmanagement GmbH & Co. KG*

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**Standardisation
as the solution
to an escalating problem**



– DANIEL SANDRINI –

*Operations Director,
Companhia Muller de Bebidas*

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**How we make glass reuse
work in a vast and complex
market like Brazil**



– ANTOINE ROBICHON –

*Deputy CEO and COO,
CITEO*

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**Creating the conditions
for scaling reuse
practices in France**



– TOBIAS BIELENSTEIN –

*Head of Public Affairs, Sustainability
& Communication, Genossenschaft
Deutscher Brunnen (GDB)*

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**Refillables in Germany,
a role model for Europe?**



– EMMANUEL AUBERGER –

*Founding President,
Uzaje*

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**Logistics is a
critical obstacle
to reuse that needs
to be overcome**



– EMILY LIN –

*Global Packaging Sustainability
Program Manager, Diageo*

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**Navigating complexity:
How to make reuse
viable for spirits**



– SCARLETTE ELIZÉE –

*Sustainability Outreach Lead,
Carrefour*

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**Becoming a laboratory
for scaling
reuse practices**



– ADELINE FARRELLY –

*Secretary General, FEVE –
The European Container Glass
Federation*

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**Policies should go
beyond setting
targets and quotas**

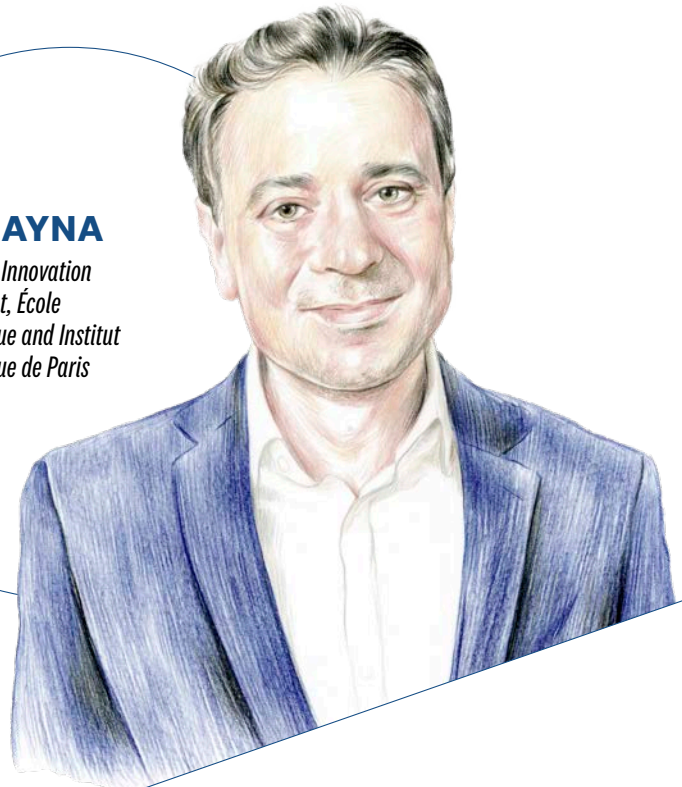


Glass reuse in the future may need to look significantly different



Thierry RAYNA

Professor of Innovation Management, École Polytechnique and Institut Polytechnique de Paris



PROFILE



- The Institut Polytechnique de Paris is one of the world's leading Universities, bringing together five prestigious STEM and engineering schools in France (including École Polytechnique) to create an institute focused on science and technology.
- Professor Rayna leads the newly established 'Technology for Change' Chair, a five-year strategic partnership between the Institut and Accenture, which aims to promote the development of innovative technologies to tackle the world's major social, economic, and environmental challenges.
- The Chair will focus on a variety of themes, such as the energy transition, sustainable technology, sustainable business models and the circular economy.

Glass reuse, as a trend, presents a sort of 'back to the future'. Much of the technology used today is the same we used when we started moving away from reuse some decades ago. So, what does a modern application of glass reuse need to consider? Many of us still have a memory of reuse in some shape or form. In such cases, there are two potential pitfalls.

The first is to assume that there were no valid reasons behind this decline — and that now that environment has become a critical issue for the masses, we just need to reintroduce glass reuse in much the same way as it used to exist. Understanding past 'failures' is key to ensuring that a large-scale reintroduction of glass reuse can be a success. A second pitfall is considering technology as a silver bullet to 'reboot' glass reuse. Temptation is great to think that a glass reuse comeback at scale could be enabled through emerging technologies, such as blockchain and Artificial

Intelligence. To be successful, glass reuse must remain a frugal and lean process — otherwise its benefits may be offset by the environmental cost of a heavy technological use.

We are now seeing global brands reconsidering reuse. But well-functioning glass reuse loops tend to be local and even often hyperlocal, so there are significant tensions and trade-offs to address. One of the main challenges for glass reuse in today's world is that it requires radical changes in the supply chain and a shift towards a less concentrated production. In this respect, one of the key questions is whether glass reuse can indeed be relevant for major food and drink brands. Heavy volume of sales may make it difficult to justify a local loop approach and reducing their carbon footprint might in fact require more centralisation. On the other hand, we have witnessed over the past years the emergence of a large number of local entrepreneurs, associations, cooperatives, new farmers, and other actors entering the food and drinks market. One of

they are rewarded financially. Consequently, to be successful, glass reuse should be as 'costless' and convenient as possible from the user perspective. Trends such as the uptake of grocery and food delivery services in many richer countries adds a new layer of complexity (how do I return used bottles?), but also new opportunities. Finding the synergies with new and existing services is critical.

For instance, grocery delivery may turn into a driver for glass reuse, if people can give their used glass to the delivery person when their order arrives.

Incidentally, this is what Nespresso has done in some countries for its used aluminium capsules: people are able to give used capsules back to the delivery service.⁽²⁾ However, this obviously requires creating strong links with established businesses, which may not be the easiest solution — what is in it for them, considering they would bear an extra cost?

This may indeed not be possible, and this is where technology could help. Ultimately, the simplest thing would be for people to throw everything together in a bin, the content of which is sorted using clever technology. In an advanced version of this, glass would be sorted separately and depending on the state of the container (whether broken or not, whether brown or green, etc), it would be either sent back to a central location for recycling or cleaned and reuse locally if sufficiently intact — just like Nespresso does in some cities: simply throw your used capsule to the bin, we will find them and recycle them!⁽³⁾

The success of the 'rebooted' glass reuse system requires an ecosystem approach and the devising of business models that can foster a level of support from consumers, companies, and the public sector. For that to happen, glass reuse should be considered as an integrated objective — part of a much wider global and conjoint solution to the global challenges we are facing around mounting waste, environmental degradation, and related impacts on our wellbeing. ●

the key challenges faced by these newcomers is that they do not have access to the same logistical power as the major brands. Yet, packaging and distribution are critical issues for their success. Reusable packaging systems may be a fantastic opportunity for them, but that would require us to think about reuse in a wider context. Indeed, the local logistics necessary for operating a packaging reuse loop may also be leveraged for other uses. In such a context, one could co-opt glass reuse logistics as to facilitate the distribution of locally produced and sourced food and drink products. These kinds of questions about new and emerging needs of different actors — for example in the wider food system — will be a key factor of success for the 'reboot' of glass reuse. We need to be open to the fact that glass reuse may need to look significantly different to what it was in the past.

Impeding environmental and ecological disaster has pushed many of us to look to the past and inspires in some of us a nostalgia about a simpler life. We tend to think past practices were intrinsically more virtuous, although many were not, and it is easy to fall into a trap of simplistic thinking about 'the good old days'. Thus, when envisaging glass reuse for the future it is important to think about its wider impact — social, economic, and societal — and not just the environmental one. In this respect, it is also critical to compare it with alternative solutions, including glass recycling. While recycling is probably not as efficient from a local perspective, it relates to a well optimised (and therefore economic, in relative terms) process, particularly in relation to global logistics. For this reason, there might not be an actual opposition between glass reuse and glass recycling, and it may well be better to think of them as complementary — rather than competing — solutions with important synergies.

But, perhaps the most critical issue remains consumer behaviour. While people nowadays are (rightfully) very concerned about the environment one should not assume that this will necessarily translate into a strong actual engagement with the practice of glass reuse. Research has shown that even the strongest concerns do not necessarily turn into action, as long as costs — whether monetary, time, or cognitive costs — are involved. For instance, while most consumers declare they strongly value privacy, in practice they carry on using 'free' services that monetise their personal data (Rayna et al., 2015).⁽¹⁾ We therefore should not expect people to engage in glass reuse, if doing so entails a significant effort on their end — even if

“

We need to assess when glass reuse has a comparative advantage over alternative sustainable practices, even if this may mean that glass reuse remains a niche in a far wider scheme to achieve a more sustainable future scenario.

1. Thierry Rayna, John Darlington, Ludmila Striukova (2015), Pricing music using personal data: mutually advantageous first-degree price discrimination, available at: <https://link.springer.com/article/10.1007/s12525-014-0165-7>
2. Nespresso (2021), Responsible Recycling, available at: <https://www.nespresso.com/pro/be/en/recycling>
3. Nespresso (2021), Yellow Trash Cans, available at: <https://www.nespresso.com/fr/en/services-recyclage-poubelles-jaunes>



Björn KNOOP
Head of Corporate
Communication
and Sustainability, fritz-kola

Glass reuse at the core of our business model



PROFILE

fritz-kola®

- Founded in 2003 in Hamburg with only 7,000 € of capital, fritz-kola are a challenger soft drink brand, selling a variety of cola and lemonade products with a strong focus on sustainability.
- fritz-kola created the 'drink from glass' initiative, encouraging consumers to adopt a resource-saving mindset and avoid plastic waste, while participating in their glass reuse model.
- With 280 employees and five bottling partners, fritz-kola is exporting across 27 European countries.

IN CONVERSATION WITH LAËTTIA FABRE, CHIEF SUSTAINABILITY OFFICER, VERALLIA GROUP

How does fritz-kola think about reuse as part of its business model?

B. K. We use pool bottles from an open rather than a managed system. That means that every beverage producer can sell, collect, and refill these bottles without joining any kind of organisation. There are around 3,500 wholesalers in Germany which serve as hubs and deliver to more than 200,000 outlets for us, including retailers, clubs, bars, cafes, and convenience stores where our products are sold with a deposit. In the 'on trade' (i.e. trade through outlets listed), we are looking at a system that is very much closed — bottles go straight back from the table to the crate. In so called 'off trade' where people take bottles away or home, it's more difficult — as people have to return

them into the system (e.g. at a supermarket) and the retailer then has to sort them so they can get returned to us. More can go wrong there. After that, our wholesalers pick the bottles up, sort them in more detail, by style and colour, and bring them back to our bottling facility where they exchange them for new products.

How does the current system hold back an ambitious business, like fritz-kola?

B. K. Systems for reuse and the logistics around it are different in every country across the European Union. That's a real challenge for us. Standardisation is not where we need it to be. Although the era of customised bottles seems to be coming to an end in Germany, we still have more than 20 different types of pool bottles to deal with.⁽¹⁾ This means more sorting and that's an efficiency loss. Especially on a European level, it would be great to have a smaller set of standardised bottles. Deposit schemes are a patch work. New EU regulation on this is coming only slowly and is mostly aimed at single-use-deposits schemes rather than reuse, even though the European waste hierarchy clearly puts reuse above recycling.⁽²⁾

Industrial capacity is another hurdle. In the 2000s, it looked like reuse would lose against single-use, so there was little — if any — investment in new, efficient bottling plants. Now the tide is turning, but the machinery and the handling capacity is very much lagging.

Collection and logistics are an often-named challenge on glass reuse — how are you encountering this and how might they be improved?

B. K. Local production is key to a sustainable glass reuse system, as it reduces transportation needs and thus the CO₂ footprint. We try to produce as locally as possible — working with five bottling partners in Germany and aiming to expand our network. Bottles that are part of a pool also reduce transportation, as well as collection and logistics complexity, as they can always be returned to the closest bottling plant.

Convenience and on-the-go bottles are harder for our model to handle. We have to think about weight and about sorting and returns — it's a trade-off. The consumer will often opt for a single bottle and we want to offer that because it can compare favourably with the single PET bottle. But not selling by the crate complicates sorting and returns. On the go bottles are unlikely to be returned



“Don't drink from waste, drink from glass.”

where they were bought, so we need to ensure that bottles can be returned anywhere. Retailers are important for sorting returned bottles, so part of the solution will need to be around improving the infrastructure and creating the space for empty reusable bottles in more places.

What is fritz-kola's greatest strength as a business and how do you use this to advocate for glass reuse?

B. K. We are a fast and flexible organisation, especially when it comes to communication and sales. Our communication is more than marketing — it's how we as brand can drive change. We really engage with our customers and consumers, discuss, and also entertain and educate them where we can, or at least make them think. An example of this is our 'Drink from Glass' initiative. We launched it to drive system change in the beverage industry, with the vision of switching to 100% glass bottles in the industry. We supported the initiative with several 360° marketing campaigns using all channels including large scale 'out of home' posters and social media. In addition, we are building a network with other producers, wholesalers, and retailers that support our vision and want to improve the reusable system together.



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Reuse is integral to our brand image. We set out almost 20 years ago to challenge the status quo in the industry – so we started with and stuck to reusable glass bottles. This set us apart. Today we have a strong brand platform to keep questioning and search for new and better approaches.

- ▶▶ We have always used glass bottles — to us they are a sign of quality and the packaging does not impact the beverage. And since we have never sold a single-use bottle or can, our credibility for and experience with glass and reuse is very high.

How important is transparency when it comes to end-consumer behaviour?

B. K. Well, if we look at the statistics from the ‘Mehrweg’ initiative here in Germany; more than 40% of people in this country — one we think of as advanced when it comes to reuse — don’t know the difference between ‘single use’ and ‘reusable’.⁽³⁾ We have deposit systems for both single-use and reusables and people get confused. There are two separate labels, but they both imply a circular economy.

Transparency is important, but clear communications is critical to shape the kind of behaviours that allow end-consumers to become part of the solution. I think it is an area that requires more attention.

Is there a trade-off for fritz-kola between your commitment to reuse and scaling the business?

B. K. Outside Germany, reuse is mostly present in the beer industry and ‘on trade’. When we set up in a new market we focus on bars, cafes, and clubs — that’s where we start to socialise the brand. Where possible we will join the reuse systems that already exist, perhaps even help to improve them, and where they don’t, we build our own. Since sorting is easier in ‘on trade’ — they get collected and picked up in the bar — so in the initial growth phase in a new market there is no ‘off trade’ for us. But in the end, a reuse system needs to be transferred into the ‘off trade’ because this is where the bigger volumes are sold. And if need be, we do not hesitate to use single-use glass as a starter and switch to reuse as soon as we have the size and knowledge of the market. We want to wake people up to what needs to be done and bring about positive change — in some cases that will turn into setting up reuse systems. We have almost two decades-worth of experience to share on that front and we are happy to join forces with everyone who is serious about reuse. ●

1. Radeberger Group (2021), Radeberger Pilsner dispenses with the 0.33l individual bottle and switches to the GeMeMa pool, available at: <https://www.beverage-world.com/en/newsdetail/radeberger-pilsner-drops-033-liter-individual-bottle>
2. European Commission (2021), Waste Framework Directive, available at: https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en
3. Mehrweg.org (2021)



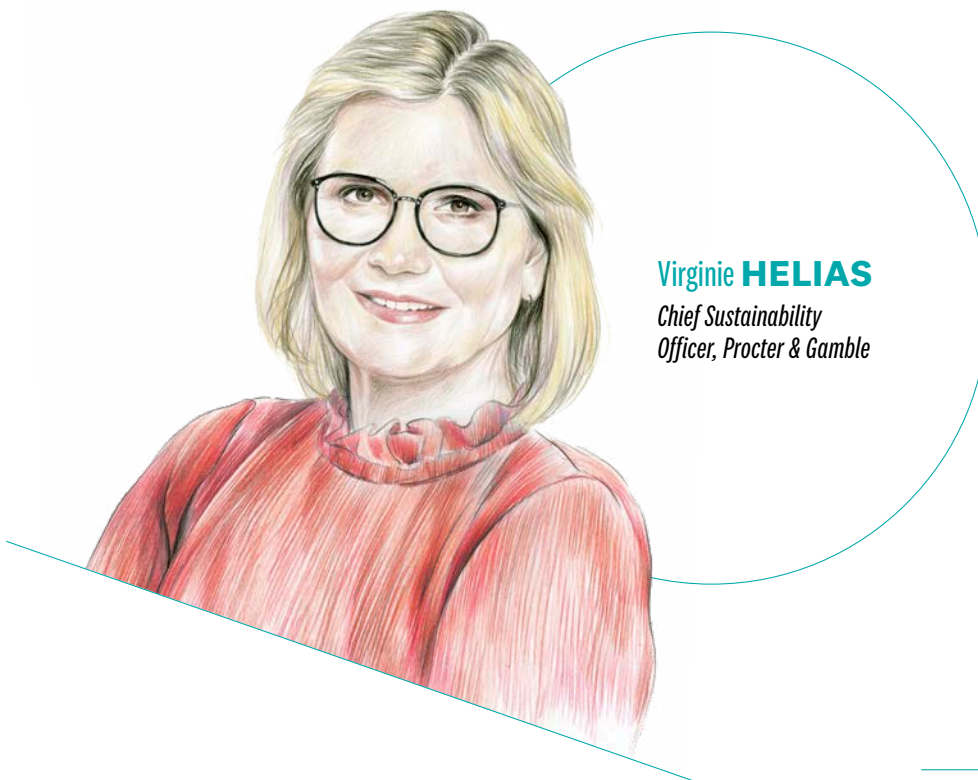
Left image: Reuse label

[Wikimedia Commons: Logo für Mehrwegverpackungen].

Right image: Single use label

[Wikipedia: Logo für Einwegpfand].

We need innovation to make reusable products irresistible



Virginie **HELIAS**
Chief Sustainability
Officer, Procter & Gamble

Making sustainability mainstream requires deep listening: what exactly is the job that the consumer wants you to do? We often hear people talking about ‘changing consumer habits.’ It is much less about ‘educating’ consumers, and rather more about companies understanding what people want and then providing those solutions — better meeting people’s needs in a more sustainable way. Responding to consumers’ expectations alongside our sustainability challenges, helps create value for all: the business, consumers, and other stakeholders — and if we get it right, we end up with an

‘irresistible’ solution. Waste is now becoming one of the top concerns for households. When we ask in our P&G customer surveys: ‘how would you like to reduce your personal impact on the planet?’, the response that comes out on top is: ‘products and packaging that can be recycled and reused’. People see reuse as one of the best ways they can contribute positively to the environment and there is a clear desire for reuse to apply across all product categories.

Reuse, as a practice, is in large part a response to consumer aspiration and this is opening many opportunities for innovation. If we want to help address people’s issue of managing household waste the solutions we offer them need to be rewarding, exciting, and simple. There is no doubt that reuse is here to stay, but for reuse to enter >>>

PROFILE



- P&G is home to many of the world’s most recognisable home brands, including Olay, Gillette, Oral-B and Fairy, which are sold in over 180 countries.
- In 2018, P&G announced targets to reduce its use of virgin petroleum plastic by 50% and make packaging 100% recyclable or reusable by 2030.
- In 2019, P&G participated in test programmes in New York and Paris with TerraCycle’s LOOP platform across a range of P&G branded products.

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Reuse is not a fad – but making it irresistible to consumers requires an innovation mindset that reaches across the whole value chain.

- ▶▶▶ seamlessly into the mass market and be desirable for consumers, innovation is needed across the various parts of the reuse ecosystem. That is how reuse can become a valuable and financially viable solution.

When we began looking at reusable packaging at P&G, our designers were very energised by the challenge. They felt that many shelved ideas and explorations for taking our product offering to the next level could be taken back out of the drawer for reconsideration. This is because the key design criteria in reuse moves from cost optimisation to durability and ‘counter-worthiness’. That was a significant mindset shift.

Looking at packaging designs through the lens of reuse has led to some award-winning packaging like the one for our shampoo and conditioner on our Pantene, Head & Shoulders and Herbal Essence brands.

We tend to look at packaging as a production cost optimisation question, but ‘reusable packaging’ could become a major asset for building brand equity. Beautiful and differentiated design is key in reuse. Products with this distinctiveness and ‘cool factor’ are selling better.

Undoubtedly, there are still many challenges with the reuse business model;

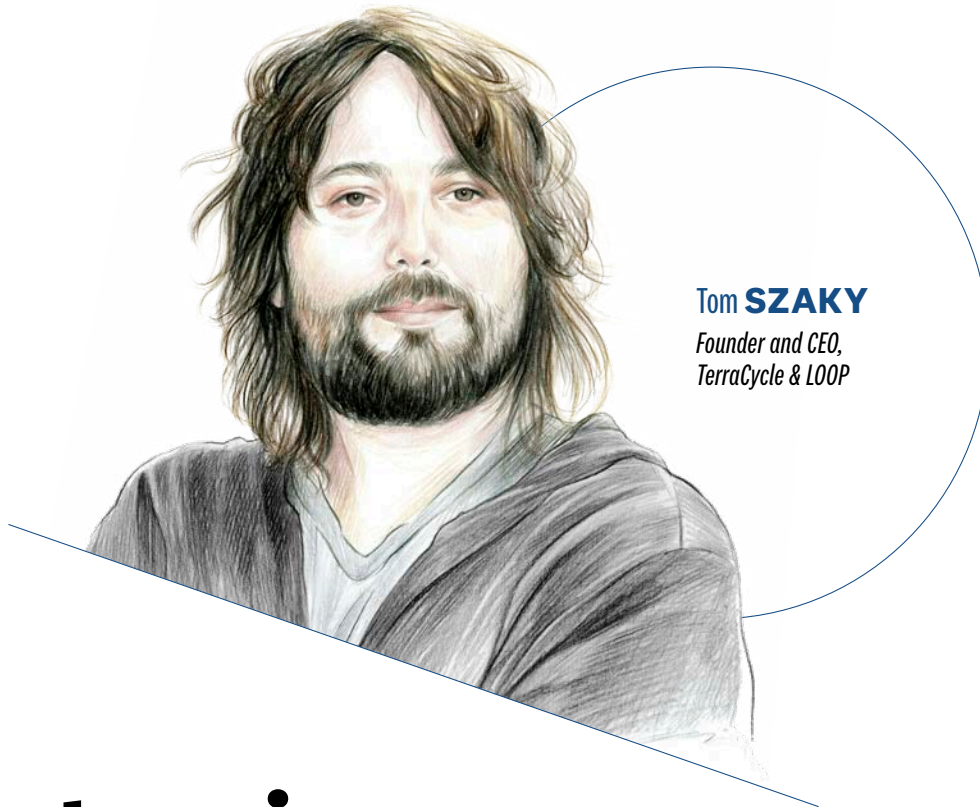
- ▶ For consumers there remain concerns and questions around convenience, affordability, and what I think of as ‘irresistibility’ of the consumer propositions on offer today, making shifts in behaviour more difficult. Most reusable solutions still require an extra effort from the consumer e.g. refill in store

might still be messy and unhygienic, refill pouches do not yet solve for 100% waste free, etc.

- ▶ There is a lack of infrastructure and most reusable solutions are not yet offered at scale, so for many it feels like the business case requires more proof. Our current linear delivery system has been optimised over decades — this sets the bar for expectations and there remain major inefficiencies in the re-use model that need addressing.
- ▶ The other challenge we face relates to the policy domain — incentives currently in place reward high recycling rates rather than waste reduction. Nonetheless, reuse is on its way to entering the mainstream domain. Soon, every sector will consider reuse as a key component for managing their waste issues. There is clear and growing consumer demand. Some years down the line, we will very likely be talking about reuse in the same way we talk about recycling today — consumers will be shopping for reusable products with their own containers as they do today with their own reusable shopping bag.

We have been experimenting with a range of reusable materials at P&G including glass. How can the glass industry make reusable bottles and containers irresistible? Check your drawers for those ideas you might have previously dismissed — ideas that make glass fit for reuse and desirable for people to use infinitely. And help ensure people are incentivised to return their packaging — sustainability is not yet a strong enough motivation for the extra steps reuse requires. ●





Tom SZAKY
*Founder and CEO,
TerraCycle & LOOP*

Returning any product anywhere: How reuse can become the norm



No single material drives the waste crisis on its own. Over the past 70 years, the economy has become focused and reliant on a pattern of disposability and single-use where manufacturers are incentivised to design cheaply and drive consumption. As a result, nearly all product and packaging materials move through a linear economy that takes, makes, and wastes precious resources and quickly sends them in one direction – the rubbish bin.

In contrast, reuse keeps materials and their forms functioning at high utility through a significantly longer period of time via multiple uses. It is a categorical move upward in the waste management hierarchy as it honours the molecules items are made from, enabling them to be enjoyed again with less impact on the environment than recycling

or disposal. Where they exist, reuse systems are usually fragmented and therefore cannot achieve impact of scale. Today, the largest scaled reuse model is pre-fill, which allows the consumer to buy filled products on a store shelf and return the empties into a bin. The challenge is that reuse systems for different products are not compatible.

At Loop, consumers pay a refundable-upon-return deposit. Once packaging is empty, they can return it to any Loop retail partner or get it picked up from their home. Collaborations with leading manufacturers, retailers, service providers, and NGOs is what has enabled us in just over two years, and during the pandemic, to launch in six major markets globally with over 500 products



PROFILE



- TerraCycle is a global (operating in 21 countries) recycling business focused on eliminating the idea of waste® by recycling hard-to-recycle waste streams, integrating recycled content into products and packages.
- LOOP was set up by TerraCycle as a platform for reuse, where manufacturers can create reusable versions of their products and retailers can make them available to their consumers – allowing someone to buy anywhere and return anywhere.
- In pilots so far, consumers are returning at higher-than-expected levels, more than 70% of products within 60 days of purchase.

- ▶▶▶ from over 180 of the world's leading consumer product companies. Critical to this growth has been understanding, rather than educating, the consumer on three habitual elements:

The first is convenience. One of the most frequent questions the reuse movement receives is: will the consumer pay? A much more useful question to ask is: is it convenient for consumers? That is the pass or fail. If the reusable product is considered inconvenient, people will not consider the rest of the value proposition. To reach the mass market and achieve scale, we must honour the convenience of disposability — any reuse model has to be as close as possible to this convenience. Only then will the consumer evaluate the other benefits of reuse, including the price.

Just as important is the product itself. We must strive towards a better product. The best proxy example is the electric car. In its early stages, the electrified hybrid cars were a sacrifice for those who were environmentally conscious — a worse car, at a higher price. Now, electric cars are objectively a better product — faster, quieter, and competitive in price. As a reuse movement our focus should be on continuously improving our product so that it is the obvious, and standard, choice.

Third is range. There is an ongoing debate within the reuse conversation on 'customisation versus standardisation'. Indeed, many would argue that standardisation is the path to scale. For reuse to work, the product range must be wide and cover the whole life of a consumer. Consider the growth of the organic products market. If the organic movement had restricted itself to tomatoes, it never would

have become what it is today. Every product must have a reusable alternative. If you are going to have infinite range, you cannot have standardisation; they are contrary concepts. The perfume industry is a good example because the design is so important to the essence of the product, the industry is unlikely to accept standardisation. Meanwhile, standardisation is more appropriate for an industry such as beer, helping drive costs down and not impacting the product's quality. Both should exist simultaneously, and the system should be able to absorb both models — letting the market decide on whether it wants to embrace the cost of customisation or not. If we recognise that we live in a world of diverse stakeholders, who have different wants and needs, we understand that customisation benefits some and standardisation benefits others, but range benefits all.

Key to bringing these diverse stakeholders together to enable and scale reuse ecosystems is creating consensus around rules and standards for reuse, as well as measures of value. We have been exploring this challenge through the Loop Alliance, comparing the environmental impacts of single-use to reusable packaging alternatives.⁽¹⁾ We are finding that while reuse is not always a silver bullet, in most cases it is both a solution to waste and reduces greenhouse gas emissions. Typically, a reusable package becomes more environmentally friendly than a disposable one by the 2nd to 4th use.⁽²⁾

One glaring gap to tackle is the lack of global safety and design standards for reuse. While it is incredibly exciting to see how many companies and start-ups are embedding reuse in their processes, there is a significant safety risk to reuse directly encountering human health. Collaboration will be vital for the many organisations who have great intentions to scale reuse but cannot access the knowledge to optimise safety. Through the Loop Alliance, Loop has established design and safety guidelines for brands; a product must be able to withstand a minimum of 10 reuse cycles to qualify and be recyclable at the end of its life as a Loop package. Through this approach we have seen tremendous innovation, not just in sustainability but also in packaging and safety design.

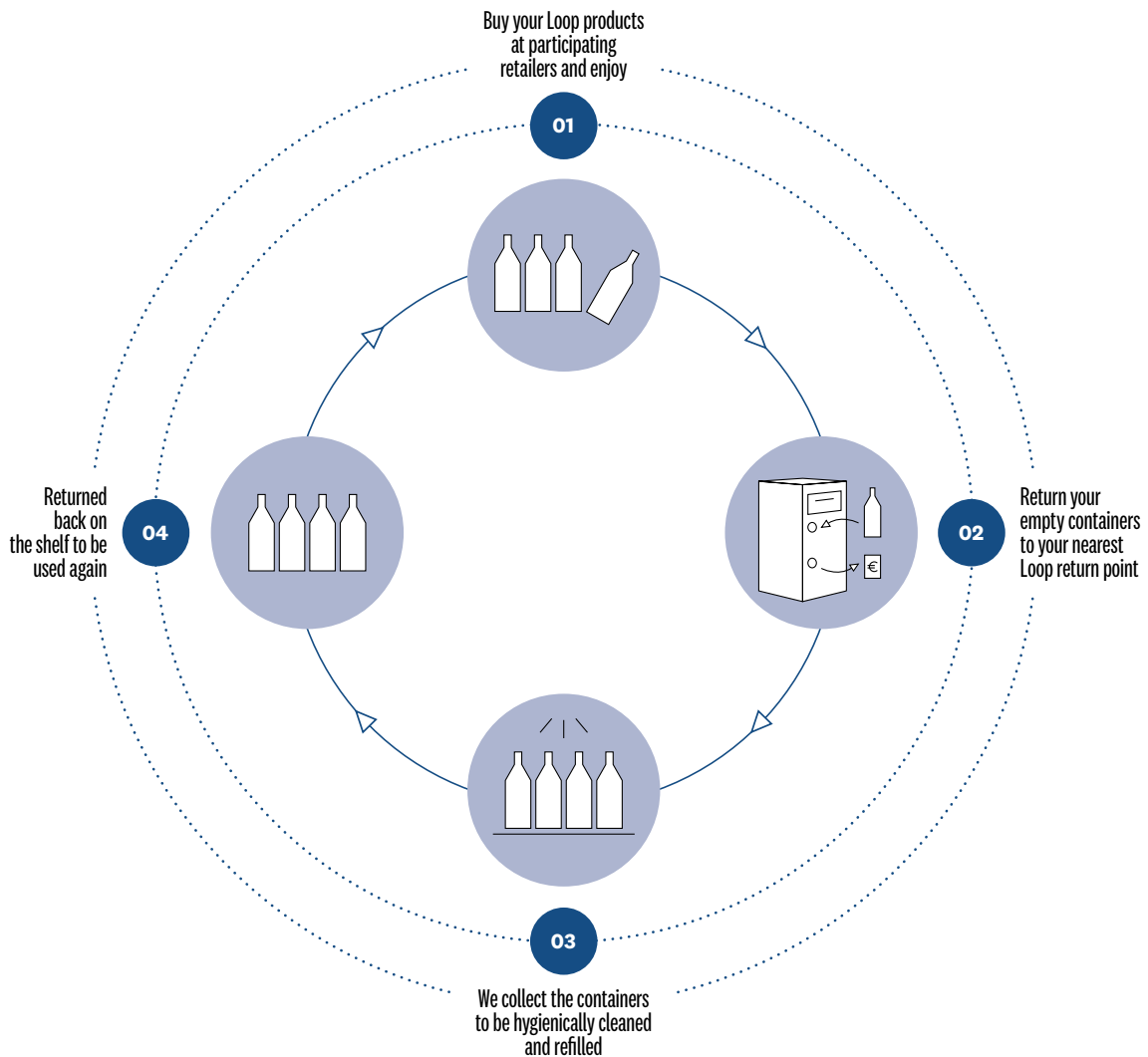
With collaboration, win-win scenarios can be created everywhere — for organisations, lifestyles, and efficient use of the planet's resources. The world is challenged by the demands of a consumer society, and our belief is that reuse can be a big part of the solution. ●

1. The Loop Alliance is an official project at the World Economic Forum, which focuses on science-based decision making and conducts numerous independently reviewed Life Cycle Assessments (LCAs) to test the viability of the Loop reuse system looking at different products, materials, and contexts. For more information see: https://s3.amazonaws.com/tc-global-prod/download_resources/us/downloads/5096/Loop_WEF_Alliance.pdf
2. TerraCycle / LOOP data, 2020.



There is immense opportunity to drive access to reusable packaging models through the creation of a 'buy anywhere, return anywhere' ecosystem and to make this global. Imagine, any manufacturer can create a reusable product to be sold at any retailer and consumers buy and return wherever they want. That is the ultimate vision for the model we have been building with Loop.

HOW IT WORKS: LOOP REUSE SYSTEM



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Loop has three requirements for the packaging to be acceptable:

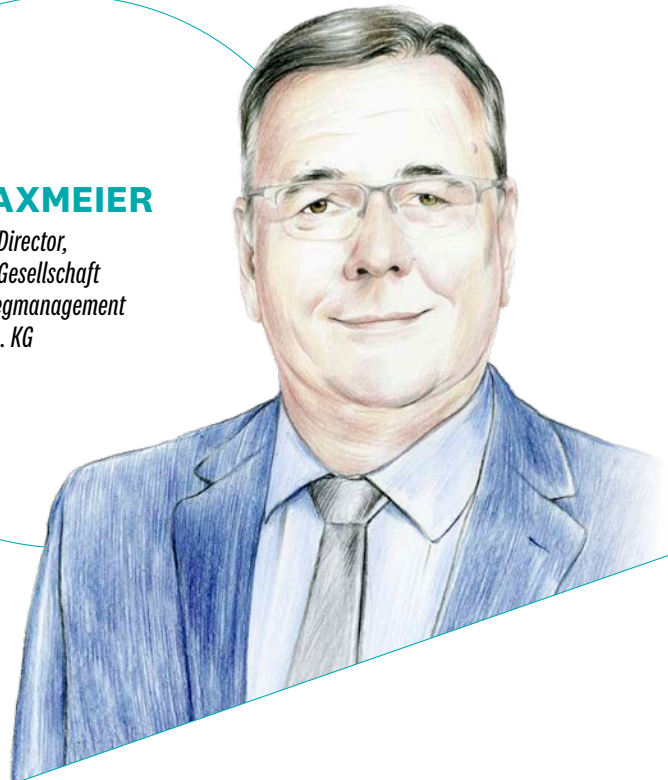
- 1 Be designed to be capable of going through at least 10 cycles of filling, use, return and cleaning.
- 2 Be cleanable in an industrial cleaning process.
- 3 When reaching the end of the useful life, be recyclable back into themselves (closed loop recycling).

Standardisation as the solution to an escalating problem



Hans **BAXMEIER**

Managing Director,
GeMeMa - Gesellschaft
für Mehrwegmanagement
GmbH & Co. KG



PROFILE



- GeMeMa was founded in 2020 by four large breweries, Krombacher, Bitburger, Radeberger and Warsteiner, to create and oversee a joint, standardised pool of 0.33 cl bottles to aid reuse.
- The goal of the controlled pool is to enhance standardised sorting and reduce complexities in the returnable system, so prevalent in Germany.
- Over time GeMeMa is looking to establish further pools - easy for producers across the beverage industry to participate in, including non-alcoholic beverages, regardless of size and volume.

IN CONVERSATION WITH KARSTEN FUCHS, CHIEF SALES OFFICER, VERALLIA GERMANY

What makes the German reuse model work so well?

H. B. The German reuse system is very established and has been upheld by a set of key industries over the years. Although some have moved towards one-way solutions, dairy producers for example, reuse persists among the beer brewers, the mineral water industry and the NAB segment (non-alcoholic beverages).

The German system was never justified on subsidies. Indeed, investment into the reuse and deposit system has grown steadily over the years. It's a long-term investment model that has been set up and financed purely by the private sector. This

applies to the 'pure packaging' investments in bottles and crates, as well as in the return systems infrastructure, such as vending machines and transport logistics. It is rather difficult to add up the costs of putting in place a system like this but estimates range between €10 and up to €40 billion.

The reuse system in Germany has not only been passed on over generations, but it is also loved by the majority of consumers.⁽¹⁾ Even more so since the debate on sustainability and climate change has gathered momentum. Today, we have the world-leading deposit system — it even captures our disposable packaging. So, return rates of over 90% are common in Germany.⁽²⁾

What is it that drove the German private sector's interest and diligence in investing in this system?

H. B. The drivers are difficult to pinpoint over that period of time, but there needs to be a framework in place that guides an economy on implementing reuse. I believe in the positive persuasion for promoting long-term change. The only way to increase reuse rates in the long run is convincing stakeholders of the value and viability of the solution. The consumer must be convinced that they are doing the right thing, the market has to create an effective guidance system (clear rules and declarations on the bottles, simple return systems, no exceptions), industry and trade organisations have to work together, and barriers to entry for innovation have to be low.

In Germany, consumer acceptance of reusable packaging is already fairly high and has actually been increasing more recently.⁽³⁾ A complicating factor, however, is excessive customisation. Industry and trade organisations must agree on a limited set of solutions — the more standardised and simpler, the better. It is important to emphasise that this standardisation cannot happen at the cost of innovations. New investments into 'pure packaging' are considerable. And indeed, more innovation is required to enable standardisation — looking at the product, the processes as well as financing models. It will be critical to find the right size bottles and appropriate crates for different consumer clusters and to ensure effective logistics around them.

Where are the barriers and limitations of the German reuse model today?

H. B. First and foremost, the reusable model needs to be sufficiently resourced. This means a pool of bottles and crates that can also absorb seasonal peaks and, of course, logistical capacities so that the goods can be transported from A to B. If these basic requirements are not in place, bottlenecks occur and the search for cheap alternative solutions begins.

The second point brings me back to innovation. When we are looking at glass packaging and crates, it is important to check whether technical innovations can be implemented, such as a reduction in weight. With reusable packaging, weight plays a decisive role over the entire life cycle of the product. The German market is set up in such a way that makes it hard for newcomers to join reuse systems. Many bottlers use one-way (disposable packaging) for market entry because it has significantly fewer market barriers. Setting up with the right empties (i.e. bottles or crates) in good and consistent quality is difficult for start-ups. Neutral crates are almost non-existent and bottle empties are only available in sufficient quantities out of season. There is still no satisfactory solution here.

Where are the opportunities for innovation on glass reuse?

H. B. It might sound counter-intuitive but, the opportunities for the German market now lie in >>>





At the GeMeMa we subscribe to an age-old principle of the circular economy; the use of common goods, the idea we have more recently reinvented as the ‘sharing economy’. For us that means bottles must be standardised so that everyone in the market can collect and use them.

▶▶ increased standardisation. The bigger the pool the simpler the transport routes and the sorting effort. In the end, this is what makes these systems sustainable and can protect the environment. Innovations are of course possible in various areas including by identifying and implementing sensible changes to the standards of bottles put in place. That’s also why in 2020 GeMeMa was created by Germany’s four biggest beer brewers to join up into a super beer pooling system, so innovation can lie in governance models like this one.

What drove the brewers to make this move and what have you learned so far from it?

H. B. 2020 was a difficult year to launch this effort with German beer bottlers dealing with the impacts of the COVID-19 pandemic, but we managed to take off. We started with a 0.33 l long-neck, which is a relatively small pool and easier to handle. What has been positive for us in setting up this pool now is that we had time to install and test things, like the investment ratio for new bottles to raise the quality in the pool. The most important aspect was that the two ‘quality quotas’ for diverting and new glass investment could be implemented without major difficulties.

We are currently in the process of documenting and evaluating the results of the first half of 2021, looking at how effectively we were able to run the pool. This is part of what makes this governance model innovative. We have recently agreed to expand into further pools, which would bring on board new partners. We want more bottlers to join GeMeMa over the coming months and years — that’s how we can improve reuse rates. The glass industry can play an important role here — taking steps to actively promote reuse before the politicians intervene and regulate.

How could glass producers and consumer brands help develop reuse models at scale?

H. B. The glass manufacturers developed the new GeMeMa — 0.33 l bottle together with us. That was an important step. We need more cooperation such as this in future projects. However,

the glass industry is currently also a bottleneck because there is not enough production capacity. Production capacity can only be built up if there is planning security. The GeMeMa could play an important role here going forward by bringing more participants into the pools, which increases the attractiveness for the glass industry.

If other sectors/countries want to successfully establish a cooperative reuse system, what are the key ingredients?

H. B. On the industry side, you need the commitment to a standardised system, built so that it can be recognised and used by all or indeed as many market participants as possible. The system will be recognised if it brings cost benefits as well as practical benefits for participants (e.g. sorting costs, reducing transport between retail, and sorting places and breweries etc). On the policy side, it must be verified that the system is in line with the local law, for example on hygiene, and indeed at the EU level. And you need baseline consumer acceptance, but this is usually a given if the new system is demonstrably sustainable. ●

1. Naturschutzbund Deutschland (2017), Representative consumer survey on beverage packaging, available at: <https://www.nabu.de/umwelt-und-ressourcen/ressourcenschonung/einzelhandel-und-umwelt/mehrweg/23441.html>
2. Plastics Recycling Association (2019), Recycling rate for PET beverage bottles remains at a high level, available at: <https://www.bvse.de/gut-informiert-kunststoffrecycling/nachrichten-recycling/4115-recyclingquote-fuer-pet-getraenkeflaschen-weiterhin-auf-hohem-niveau.html>
3. Getränke Zeitung (2021), First increase in the proportion of reusable items since the introduction of deposits, available at: <https://www.meininger.de/alkoholfreie-getraenke/erstmalig-anstieg-des-mehrweganteils-seit-pfandeneinfuehrung>



Daniel SANDRINI
*Operations Director,
Companhia Muller de Bebidas*

PROFILE



- Companhia Muller de Bebidas are a Brazil-based alcoholic beverage manufacturer, specialising in producing and distributing Cachaça – a distilled spirit made from fermented sugarcane juice.
- Cachaça 51, their first product, is the most popular brand of Cachaça in Brazil and Companhia Muller de Bebidas currently export their products to more than 50 countries.
- Companhia Muller de Bebidas uses glass as its main source of packaging material and operates dedicated infrastructure to control and enable glass reuse.

How we make glass reuse work in a vast and complex market like Brazil



Today 65% of our product portfolio at Companhia Muller de Bebidas (Cia Muller) is sold in returnable packaging. 75% of bottles of our leading brand, Cachaça 51, are sold in reusable glass, this represents 10 million reused bottles every month across more than one million points of sale across the entire country. And it's important to remember here that Brazil is almost as big as the whole of Europe. Our reuse system is organised around 1,100 distributors (customers — excluding self-service and other special channels) and 20 brokers (bottlers). Cia Muller dispatches bottles to regional distributors with their own point of sales network. We

own the bottles (company assets), so we only invoice the liquid to the distributor. Distributors will sell products through their network, pick up empty bottles from bars and restaurants and bring them back to us for washing and refilling. In parallel, we also work with other brokers who collect bottles from bars or on the streets outside the distribution system, organise them by brand, and then we purchase the bottles back from them to go through the same process of washing and refilling. >>>

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We have been developing and improving a reuse system for 40 years in our business, reusing our bottles and refilling them with our cachaça product. We have grown with and through the glass reuse system. We have increased our investments into bottle assets over the years and were able to develop a flow in which customers return empty bottles for refill. This system has enabled us to build customer loyalty and reach scale.

▶▶▶ Developing viable reuse systems that can offer scale is challenging in many respects especially in a country like Brazil. And we often come across the same questions over and over again: How can we optimise reuse logistics in a country the size of a continent? How could we bring the different actors together around a set of shared goals and commitments? How can we make it easy for consumers to encourage reuse behaviours? How can we advocate for step-change regulation on reuse? If we want to scale reuse systems, we need to activate different levers starting with policies. At the moment, there is no government incentive for reuse in Brazil. New policies will be key to driving change among businesses and consumers and to help make reuse the new normal. Government incentives, in particular tax mechanisms that encourage investment in reuse systems, would help drive more collective action and deliver benefits over the long term for all.

For us at Cia Muller reuse is a better option, financially and environmentally speaking, compared to recycling, so we are engaging with recycling cooperatives to get more reusable cachaça bottles from their collection process. In 2021, we started a pilot project in Sao Paulo, working with 10 recycling cooperatives to collect glass bottles around the largest city in the country — not for producing cullet, but for those bottles to be reused and refilled in our facilities. For our pilot to be economically viable we need to achieve a collection of 50,000 reusable bottles per month and optimise the transport. Making reuse a common practice also requires us to work closely with the bottlers and together explore new solutions to increase the collection of empty bottles. And because we know that consumers play such a critical role in the success of any reuse scheme, we want to collaborate with other local partners, retailers, and local governments, to make it easy for consumers to bring their empty bottles to a collection centre.

Finally, we want bottles to be able to support a longer life cycle and multiple reuse loops. Glass manufacturers have a key role to play in helping us scale up reuse schemes in Brazil. We know that it's a long journey and only shared ambition and responsibility will allow investment to flow into that system, driving new technologies and modern infrastructures as well as supporting campaign programmes to bring consumers on board. ●

Creating the conditions for scaling reuse practices in France



Antoine **ROBICHON**,
Deputy CEO and COO, CITEO



IN CONVERSATION WITH LAËTITIA FABRE, CHIEF SUSTAINABILITY OFFICER, VERALLIA GROUP

We've recently seen an increase of reuse loop initiatives across many regions in France – what will it take to do more of this at scale?

A. R. Indeed, we are seeing reuse rising on the agenda here in France. There is much to gain from considering reuse alongside recycling – in part because there are learnings and existing cross-sector collaborations to take advantage of, and in part because the systems we build will need to be complementary to be viable.

I think there are two priorities to think about when it comes to developing reuse initiatives across the country. On the one hand the systems need to be set up for scale – allowing for pooling, economies of scale, and superior environmental performance. On the other, we need to consider standardisation as a critical lever – not just of packaging, but also of the reuse processes – that is to say, the recovery, transport, sorting, washing and quality control of reusable packaging. For stakeholders to have trust in the process and make it viable and scalable, we need to guarantee that reusable packaging offers the same quality and safety standards as

new packaging. So, a food or beverage producer can be confident that when ordering pallets of packaging containers for its products there is no difference between new and reused containers.

A big hurdle for us in France today is the lack of coordination and common practices between different players. Let's take, for instance, recollection. The approach for glass recollection might be different depending on the retailer. The recollection point might be in different locations in the store depending on the retailer. Some retailers might use different recollection systems: some are working with an app, others without it. A few retailers may pay you back when you bring back your bottles, others would offer you a voucher. The lack of consistent practices does not help to create behaviour habits for the consumer. We need to get consumer acceptance to make reuse a success and to achieve this we need to provide simple standardised solutions to consumers. >>>

PROFILE

CITEO

- CITEO is a not-for-profit company based in France, focused on reducing the environmental impact of packaging and paper
- The organisation supports companies with reduction, reuse, sorting, and recycling solutions for their packaging
- CITEO also campaigns to embed waste sorting as a habit among consumers in France – working to educate and simplify the sorting process wherever possible
- Currently, 100% of the French population have access to sorting facilities either using specific household waste bins or collection containers in public areas.



»» **What is the business case for glass reuse in France? And how can it find a role alongside recycling?**

A. R. Reuse and recycling are two solutions that complement each other. But there must be a new way of consuming where recycling or reuse is factored into the buying process. This means that when a consumer buys a product in a store, they need to understand whether and how they will reuse or recycle the packaging depending on the material. Both systems can coexist effectively: reuse for local and 'pre-planned' consumption where people can bring back their bottles where they bought them (e.g. in a supermarket), and recycling for 'nomadic and impulsive' consumption where people are on the go and can drop their empty bottles at a collection point. The consumer needs to want the new products, but above all they need to be able to adhere to the new approach and be consistent in their behaviour, so that reusable solutions can really have an added environmental value compared to purely recycling.

For reuse solutions to appeal to both businesses and to consumers, a holistic approach is required and demands coordinated efforts from all stakeholders (producers, glass manufacturers, retailers, collectors and washers and local governments): we need to help facilitate behaviour change among consumers while at the same time developing more offers (i.e. product ranges available for reuse) and building out relevant and standardised infrastructures – places of sale and methods of recovery, transport, and washing capacities.

What are the big hurdles ahead for establishing sustainable reuse practices in France and how could these be overcome?

A. R. There is the design and the guarantee of 'reusability' of the packaging, which is necessary for manufacturers to adopt this solution. Providing this should be a collaborative effort between glass manufacturers and fillers.

Then there is the deployment of a dense and national network of sales and collection points led by retailers, which is necessary for the solution to be effective from a financial, logistical, and environmental point of view. For instance, a drink in a glass bottle may be produced, distributed, and consumed in three different regions. For reuse to work, the distributor needs to have the network that allows a bottle collected in one region to be returned to the region where the drink is produced. The producing and distribution models, as we know them today, were developed for single-use packaging. We need to rethink these models and adapt them for multiple-use packaging.

We tend to talk about maximising the opportunity in standardising the product so it can be reused more widely (e.g. beer bottles), but we don't give enough attention to the 'standardisation of processes' surrounding that product, which are required if we want to expand reuse practices and do so in a way that ensures the environmental impact is optimised."

What impact might more reuse have on glass product design?

A. R. One could imagine an evolution as we have seen in Germany, where technical specifications for standardised container formats are filed and any supplier can apply for accreditation to produce them.

In France, only a large variety of products with reused packaging and an extended collection network across regions will allow for a more robust market and will allow manufacturers to establish a more equitable relationship with suppliers.

What should collaboration look like to help make reuse a viable solution in France? Where are the opportunities to do more in partnership?

A. R. In France, the government has provided ample resources (financial, but not exclusively) and incentives (industry-led targets) in the AGECE and Climate & Resilience laws.* This provides a valuable framework for the various actors of the reuse ecosystem to collaborate and find solutions that work for everyone. At the same time, the standardisation of packaging is an opportunity for food and beverage companies to develop economies of scale through the standardisation of reuse processes. We see this emerging around more effective operations of reuse systems, like we have seen for recycling in the past.

To create viable reuse systems, expertise must be pooled – for industrial processes, including washing and transport among other key steps. Often these different players are already working together, now they have a new subject to unite them on: reuse. ●

* Ministry of Ecological Transition (2021), The anti-waste law for a circular economy, available at: https://www.ecologie.gouv.fr/sites/default/files/Document_LoiAntiGaspillage%20_2020.pdf

Refillables in Germany, a role model for Europe?



Tobias BIELENSTEIN

Head of Public Affairs, Sustainability & Communication, Genossenschaft Deutscher Brunnen (GDB)



PROFILE



Genossenschaft
Deutscher Brunnen eG

- GDB is the largest managed refillable beverage system in Europe with 180 members across Germany, consisting of well-known mineral water brands to regional springs.
- Currently, GDB manages reusable pools with more than a billion bottles and a 100 million crates – this scale means a third of the total sales of German mineral springs are filled in bottles and crates from GDB, and companies all over Germany use the same bottles and crates.
- GDB's returnable glass bottles are refilled up to 50 times, creating an annual volume of around 6 billion fillings.

Europe will see more refillable glass packaging in the future. This forecast is not very daring. To achieve the goals of the Green Deal and bring Europe to climate neutrality by 2050, we need packaging solutions to be circular and we need to use refillable packaging wherever appropriate in ecological, social, and economic terms. Glass has an important role to play in this. The 'pearl bottle' used for mineral water is one of the best-known generic brands in Germany – 97 percent of the German population associates the striking design with mineral water.⁽¹⁾ This iconic bottle has won numerous design awards and is protected as a European trademark. It is also one of the most recognised symbols for reuse in Germany. The pearl bottle has been on the market for over 5 decades – managed by the Cooperative of German Mineral Water Companies (GDB) since 1969. With more than 6 billion fillings per year, the GDB refillable system is the largest managed refillable system in Europe.

The pearl bottle is a so-called refillable pool-bottle. This means that it is used jointly by different bottlers across Germany. Pool refillable systems are more efficient than individual, branded refillable systems due to shorter transport routes and reduced sorting efforts. More than 140 companies with more than 500 brands participate in the GDB system today. After losing market share at the beginning of the millennium due to single-use PET, the segment has experienced stable growth since 2019. The increasing demand from consumers for ecologically sustainable packaging plays a significant role in this development. Other refillable pool systems in Germany, for example in the carbonated soft drink (GfK and Nielsen) and fruit juice sector, are recording the same trend.⁽²⁾

We are seeing a new growth dynamic outside of the beverage sector. The use of refillable pool containers initially designed for the dairy sector – milk bottles and yoghurt jars – is growing rapidly. This growth is driven by an innovative form



▶▶▶ of 'abuse' of the system — young food start-ups are filling (mostly) organic food into established refillable containers of the dairy pool system. Around 100 food companies across Germany have entered the market here since 2019. One reason for this development is the fact that these refillable containers from the dairy industry are well-known and understood. There is no need to implement new structures and the system does not have to be explained to consumers. Time-to-market can be a matter of just a few weeks.



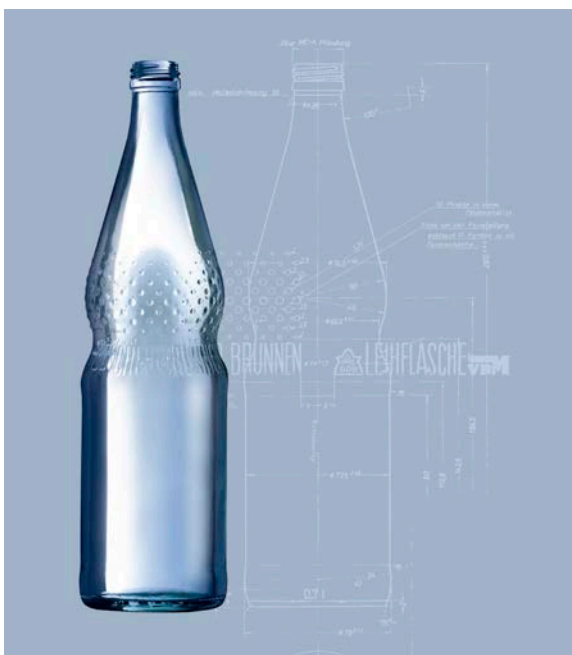
One of the current challenges in Germany is the growing number of individual refillable bottles. This means a higher sorting effort for both manufacturers and retailers. It is important to consider that refillables are not always the best solution. The recycling of single-use packaging has enormous potential. Refillable packaging is in fierce competition with single-use recyclable packaging and can only assert itself through constant development and improvement. The glass industry is a very important partner for all refillable systems to be successful here.

beverage wholesalers and retailers. Together with food retailers, they form a stable and highly efficient 'ecosystem' that keeps the refillable cycle going. These structures have shaped the German consumer experience in significant ways over generations; beverages are bought in specialised beverage shops and food retailers where they are available to buy in crates. The empties can also be returned at these sites, making the system simple and easy to access. An increasing number of delivery services, especially in urban centres, complements this range of points of sale for beverages in refillables.

So, what is it that makes the refillable systems in Germany, and the GDB refillable pool particularly successful? On the one hand, there are structural reasons. The beverage industry in Germany is characterised by many regional manufacturers who rely on refillable systems, especially pool refillable systems, as these can be operated at lower costs than individual refillable or single-use containers. There are a variety of specialised

The GDB is organised as a cooperative, which means that the GDB customers are also the owners of the company. The reason for the success of the GDB refillable system lies in many ways in the management structure of the system. The GDB pool system is based on a set of standards

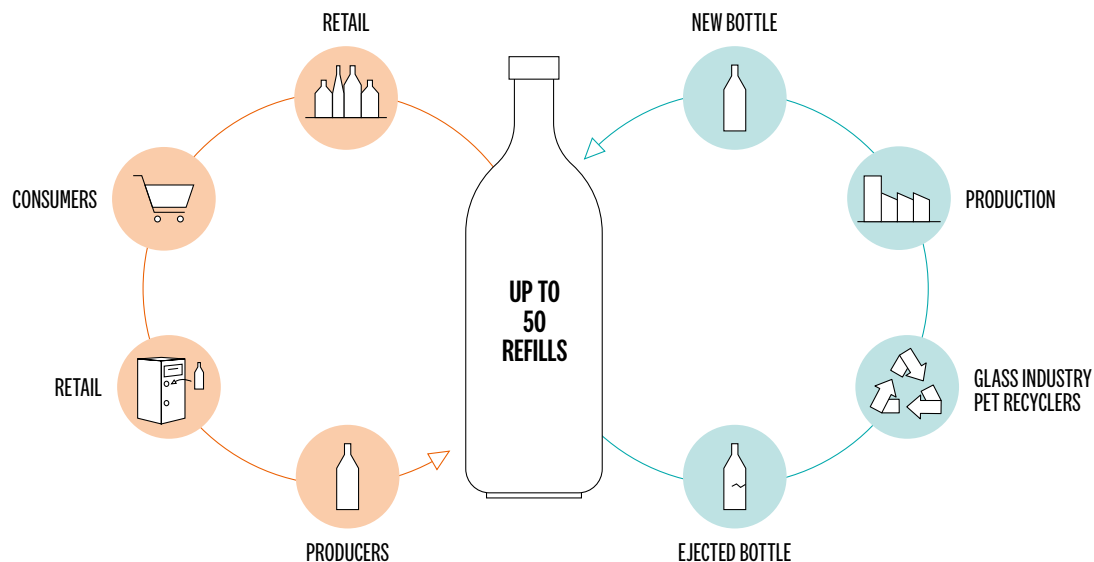
Pearl bottle



There are several structural, economic, ecological, and social reasons that refillable systems in Germany have held their own against the Europe-wide single-use trend of the past decades. This is now proving to be an advantage, as packaging must be reconsidered in the course of the transformation to a climate-neutral economy.

HOW IT WORKS: THE GERMAN POOL REUSE SYSTEM

This system is referred to as the ‘double circle’. In the primary circle, glass refillable bottles circulate up to 50 times. Then they are fully recycled in a secondary circle — to start a new life in the primary circle again.



and rules that ensure consistent quality and a fair sharing of burdens and duties among participants / members. This is a critical prerequisite for the success of pool systems — other refillable pool systems in Germany have started strengthening management structures and thus, heading the same direction of the GDB system.

For me, the two key lessons from the German model are focusing on both long-term thinking and defining means of cooperation. To answer the question whether the German model might be emulated in other European countries I would take a step back. Europe is based on a common value system, which manifests itself in many variants in the European states and regions. Europe tends to be particularly successful when it succeeds in combining unity and diversity and keeping them in balance. This makes the principle of subsidiarity — where the EU does not take action unless it is in its exclusive competence or this would be more effective than action taken at the national, regional or local level — one of its most important foundations.

This principle of unity and diversity can also be applied to the question of refillable systems in Europe. This is evident when we look at existing refillable systems operated in European countries and it will become even more important when new refillable systems are set up. Refillable systems

must be adapted to the respective national structures of manufacturers and retailers and match the respective shopping and consumption habits. A central functional principle of refillables is that it has to be easy and simple for consumers and it has to be fair for all partners cooperating in the supply chain. To this end, clear governance principles must be agreed if the systems are to be successful in the long term. The GDB refillable system has decades of experience when it comes to understanding these functional principles and has poured this into standards and rules for implementation. Anyone wishing to set up a new system would be well advised to draw on this existing knowledge and adapt it to the needs of their customers as necessary.

When it comes to designing refillable systems across borders — i.e. designing them to be truly European — they will have to be organised as pool systems if they are to be environmentally sustainable. Here too drawing on experience from Germany can be helpful. The GDB is already involved in various dialogues on this today. And we, in turn, rely on the exchange and cooperation with our European partners to keep our model in tune with a fast-changing world. ●

1. Kantar Emnid (2015)
 2. Frucht Saft (2021), Fruit juice market 2020 with ups and downs, available at: <https://www.fruchtsaft.de/presse/meldungen/fruchtsaftmarkt-2020-mit-hoehen-und-tiefen/>



Emmanuel **AUBERGER**,
Founding President, Uzaje

Logistics is a critical obstacle to reuse that needs to be overcome

PROFILE



- Founded in 2018, Uzaje is a French start-up focused on advancing industrial solutions for the reuse of packaging.
- Uzaje develop and operate sorting-washing-inspection centres for packaging, with two operational centres in Avignon and eastern Paris.
- Uzaje have so far conducted over twenty pilot programs across France in partnership with a variety of food manufacturers, experimenting on fast-food, company restaurants and school catering.
- Early 2022 Uzaje raised €4 million to accelerate the national deployment of its industrial solutions for the reuse of food containers.



Facing new legislation on packaging, notably the European anti-waste law for a circular economy, regions and cities are announcing new environmental commitments while calls from consumers for alternatives to single-use packaging are growing. This is putting food and beverage manufacturers under pressure to innovate and adapt. At Uzaje, we are developing technical solutions to enable them to switch to reuse — helping them think through what type of packaging to choose, how to implement it in stores, and how to organise logistic loops or deposit systems.

Since 2019, reuse has re-emerged among food and beverage manufacturers as an alternative packaging model to explore. This trend has accelerated significantly in France since the passing of the AGEC and Climate Resilience Laws, which aims to increase the proportion of reused packaging

compared to single-use packaging.⁽¹⁾ It sets a target of a 20% reduction in plastic packaging by 2025, half of which will be achieved through reuse. Many of them are therefore exploring bulk sales and working on packaging, with high levels of recycled content or reuse (glass, stainless steel, plastic). The trajectory, given the new law in France, is that we will see reused packaging go from the current baseline of 1% to 5% in 2023 and 10% in 2027. We observe a similar trend in other markets such as Austria, Portugal, Romania, Chile and India where policymakers adopt new regulations that set new targets for reused packaging.⁽²⁾

Glass is the easiest packaging material for us to wash and then reuse, which is why it is so prevalent in the world of tableware. So, Uzaje is working to expand the reuse of existing glass to other sectors, particularly in the replacement of plastic bottles and food cartons.

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To make reuse viable and do so at scale we need to challenge our thinking about the logistics involved.

Our pilots and experiments have shown that consumers understand what action they need to take, particularly in markets where recycling is already well developed. Often the reuse behaviour represents only a small step from recycling and consumers are willing to bring their packaging back to the point of sale. There are other markets where recycling is not well developed, but where reuse is a common practice — for instance in bars and restaurants in Brazil. Meanwhile, food and beverage manufacturers are confirming their willingness to move forward, for example by standardising their packaging amongst themselves. This provides a solid base for expansion.

The main obstacle currently lies in the organisation of the reverse logistics of packaging between the point of sale (canteens, restaurants, supermarkets) and the washing centre. So, what system can be put in place to reduce the economic and environmental impact of reuse while also having the right capacity to wash high volumes of reused packaging? Today, at Uzaje, we can wash 30 million packaging containers per site per year.

In France, the new AGEC law now prohibits the destruction of unsold non-food goods, so we will see more items brought back to the distributors. With more and more pallets returning from the

retail stores to the distribution centres, could empty bottles and jars also be returned using a similar scheme?

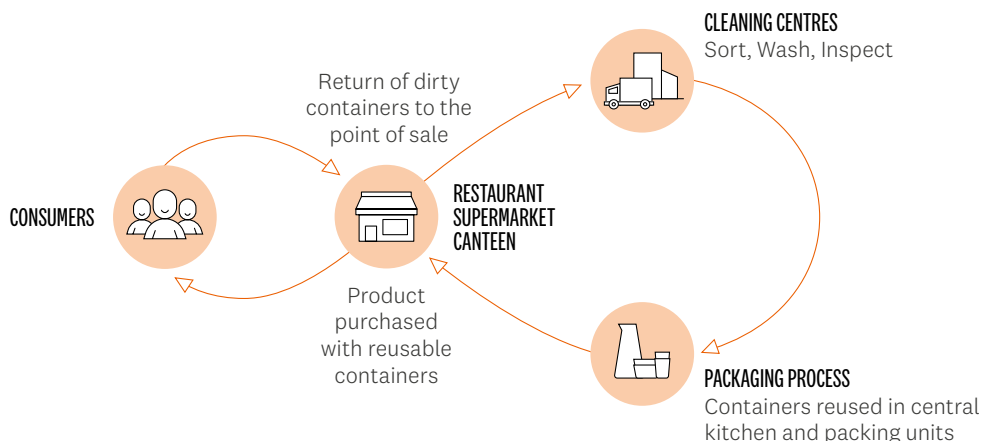
Reuse in France will grow, so naturally, we are also looking to other systems put in place in other countries to see how best to create reuse systems that work for us. The German model is difficult to replicate in France because it is linked exclusively to German consumption habits, where reuse and recycling have become deeply embedded over time. Their systems are also strongly focused on water and beer. The Belgian model may be more interesting and could be a best practice model to replicate in other markets, as it covers a very wide range of products including beer, milk, water, wine and more. There is a recycling and reuse culture in Belgium; houses and flats are often designed with recycling and reuse in mind and include specific containers for empty bottles to be reused and other items to be recycled. The Belgian model, for me, clearly demonstrates how recycling and reuse models can coexist successfully. ●

1. Ministry of Ecological Transition (2021), The anti-waste law for a circular economy, available at: https://www.ecologie.gouv.fr/sites/default/files/Document_LoiAntiGasillage%20_2020.pdf
2. Greenpeace (2021), The world is ditching plastics with reuse and refill laws and practices, available at: <https://www.greenpeace.org/international/story/51843/plastics-reuse-and-refill-laws/>

Uzaje washing plant near Paris with the Seine washing line for bottles and Marne washing line for jars, trays, and other containers.



HOW IT WORKS: UZAJE REUSE PACKAGING SCHEME



Navigating complexity: How to make reuse viable for spirits



Emily LIN
*Global Packaging
Sustainability Program
Manager, Diageo*

PROFILE

DIAGEO

- Diageo are a British-based multinational alcoholic beverage company, with a collection of over 200 brands that are enjoyed in more than 180 countries around the world.
- They are home to many of the world's most recognisable beverage brands, including Guinness, Baileys, Smirnoff, and Johnnie Walker.
- In 2020, Diageo launched Society 2030: Spirit of Progress, a 10-year action plan with sustainability targets for carbon, water, and packaging, including ensuring 100% of their packaging is widely recyclable or reusable.

Today, consumers and policymakers alike are expecting producers to make sustainable decisions for the products that our industry puts on the market.

At Diageo, we have embarked on a 10-year action plan to create a more inclusive and sustainable world. As a company, we have already made big strides reducing our environmental impact, but we won't stop until we have maximised the opportunities that lie in reducing packaging and increasing recycled content. Reuse is one of the solutions we are focusing on to eliminate waste, but there is a major challenge for us: How can we mainstream a reuse supply chain model?

Most global consumer goods companies have built highly efficient supply chain models where regional manufacturing facilities supply products around the world. This model depends on a linear concept of packaging. With refillable glass and dispense systems we can create reverse logistics that positively impact the product's carbon footprint and are also financially viable. This type of model works best in densely populated markets that have physical proximity to bottling facilities. However, there are

limited opportunities to implement this model without significantly shifting a company's supply footprint. For Diageo, we have the added complexity of many of our products requiring production in a specific region — Scotch in Scotland, Bourbon in the US, and much of our Tequila in Mexico. This can make the carbon and financial impact of retrieving from market of sale to return to country of origin a non-starter. The evolution of highly efficient global supply chains remains one of the biggest obstacles for implementing a successful reuse/refill model for the spirits industry and ultimately creating a circular economy for packaging.

One way of overcoming this barrier is to establish a refill at-home model where consumers can opt to buy a value replacement that is typically lighter weight, less durable, less decorative but at a lower price. Done well this option helps us to reduce our carbon footprint and gives customers a low-cost solution to refill their bottle. Yet, the industry must also ensure that the refillable container itself is recyclable. After various reuse loops, when a material reaches the end of its life, it still mustn't be disposed as waste. This is a major concern — we will limit the potential of a widely-adopted reuse system

if we do not design at-home refillable containers as recyclable. For premium spirits, the situation is even more complex. Maintaining the aesthetics without over-engineering the bottle while reducing carbon emissions can be a real challenge. That's why we need to continue to innovate and explore new solutions for premium spirits, especially for those tied to specific regions such as Scotch, Tequila, Bourbon and others.

The next obstacle, and arguably the most challenging, is consumer acceptance. As we continue to navigate a global pandemic, consumers have become more sensitive to the hygiene of packaging. Indeed, a majority of respondents to McKinsey's Packaging Survey 2020, covering Europe, Asia, & US, said they are "more concerned with hygiene and food safety of packaging compared to before COVID-19".* This shift will need to be watched closely as we enter a post-pandemic era, but it has the potential to set back progress for reuse. To address such concerns, widely available education to consumers will be key, particularly on the processes of cleaning and refilling in a functioning reuse system. Our industry must be trusted on this; meaning our focus on, and adherence to, consumer protection needs to be as strong as it is in our current system. Transitioning consumers to a circular reuse model also brings potential for incentivisation. Creating reusable products with a premium look and feel can communicate to consumers that their reuse of the product is worthwhile, as the perceived value of the product is greater than those easily disposable, incentivising better treatment.

Different reuse models are already implemented, and used by other beverage segments, where consumers return empty bottles to point of purchase to redeem a deposit; others have started using

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Arguably the most challenging obstacle for reuse is consumer acceptance. It cannot be assumed that people will sacrifice convenience and perceived hygiene to make refill/reuse models successful. Consumer education, incentivisation, and premiumisation will be important to promote and transition towards a circular reuse model.

CASE STUDY



McDowell's No. 1, one of India's most popular spirits brands, has implemented a glass bottle return system allowing the brand to reuse about 35,000 tonnes of glass each year. This system is enabled by third party reverse logistics, with the bottles collected after consumers have enjoyed the product. The bottles are then inspected to confirm that they are fit for reuse, are washed, sanitised, and then sold back to the brand. The bottles go through a final inspection before being refilled at the manufacturing facility. This collaboration was set up to improve sustainability, create local jobs, and reduce cost.

a service to pick up bottles from home. Aside from the need to shift consumer habits, the refill on-the-go system presents specific challenges to the spirits industry: for instance, the confirmation that the correct liquid is going into the correct bottle, the person filling the bottle is of legal drinking age and permitted to fill as per local regulations, and the consumer is filling only to intended fill height to ensure proper taxes being paid. All this adds further layers of complexity. In many of our markets, on-trade consumption is close to 50% of market consumption, which means that bartender acceptance of the proposed model is also critical to its success.

Another challenge for spirits companies is our role in a constructive public policy dialogue. Policymakers are driving new legislation for packaging materials, and imposing bans on single-use and excessive packaging. Although spirits producers may not be the biggest offenders in terms of volume of packaging material, the industry will be impacted nonetheless. It is important for us as an industry to have presence in policy conversations, as return schemes could act as a great stepping stone for consumers to create a habit of returning beverage containers and accelerating acceptance of a return/refill model for our products. By using policy to nudge consumers and producers into making sustainable choices, we can expedite the push to more sustainable supply chain models and create a mainstream reuse model for a circular future. ●

* McKinsey & Company (2020), Sustainability in packaging: Inside the minds of global consumers, available at: <https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/sustainability-in-packaging-inside-the-minds-of-global-consumers>



Scarlette **ELIZÉE**
*Sustainability Outreach
Lead, Carrefour*

Becoming a laboratory for scaling reuse practices



As a major global retailer, we hold a unique position touching on all stages of the supply chain from production and manufacturing to a product's end-of-life. Every day, we interact with millions of customers across more than 13,000 stores around the world. Our close proximity to customers allows us to observe changing behaviour and expectations in real time and we are able to test new ideas with partners including our national brands and NGOs.

Customer concerns around how products are produced and the impacts they have on health and the environment has been growing steadily, and that has significantly shaped how we think about our role as an actor in society and our business strategy. This is why Carrefour has defined its *raison d'être* as leader of the food transition for all, ensuring that the products and solutions we offer are healthy, sustainable, and accessible for everyone. This approach also applies to how Carrefour addresses the issue of packaging. Carrefour has committed to 100% reusable, recyclable, or compostable packaging by 2025 for its own brand products. With this we seek to lead the retail industry towards a more measured use of packaging and to ensure the eco-design of packaging

PROFILE



- Carrefour is a French multinational retail corporation, operating a chain of hypermarkets, groceries and convenience stores comprising of over 13,000 stores in over 30 countries.
- In December 2020, Carrefour was the world's first retailer to offer Loop's reuse system in-store, providing a range of everyday products from recognisable brands. This scheme initially began in 2-10 shops and has expanded in 2021.
- The Group's targets as far as CSR and the food transition are concerned are measured via a set of performance indicators integrated into the CSR and Food Transition Index. This index serves as a criterion for setting managers' pay and also enables employee mobilisation on strategic issues.



Packaging and particularly ‘over-packaging’ of products is a top concern among customers. Where possible we need to reduce the amount of packaging brought to market and we must significantly improve the use and disposal process – as a retailer we want to be able to guarantee reuse and recyclability of the packaging we are left with.

used for its products. Carrefour also involves its customers in this transformation through consultations to identify consumer expectations on where Carrefour should take action. Among the top voted solutions included zero packaging and bulk solutions.

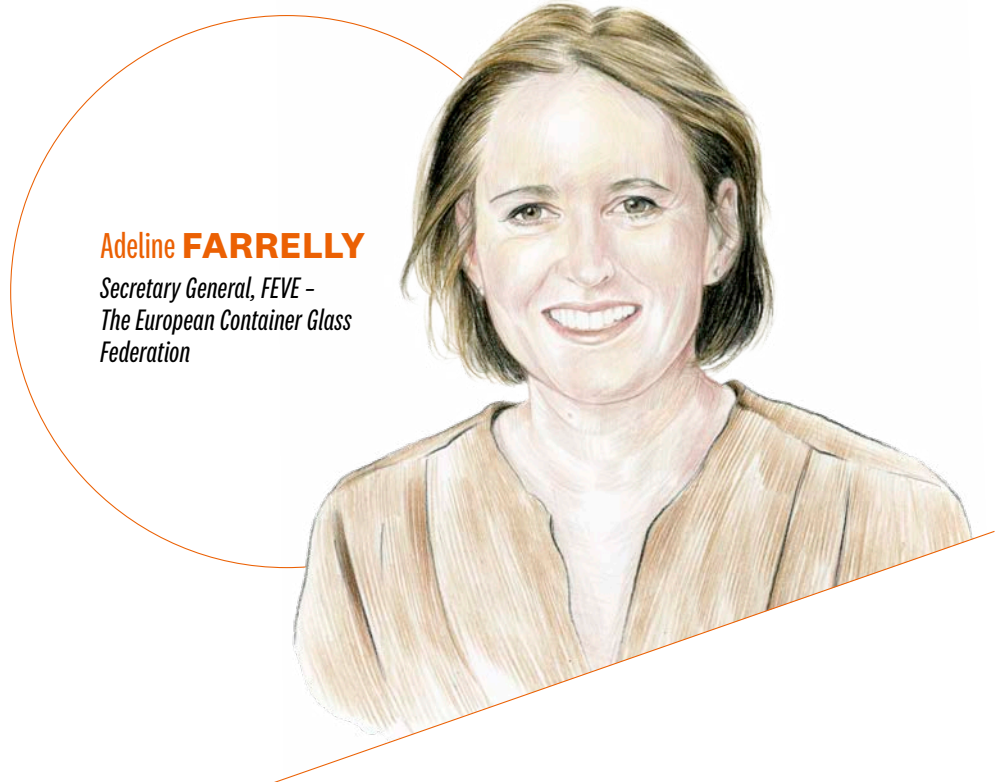
Reuse is an important consideration for us — we believe it is a consumer and societal trend that is here to stay. Customer uptake of existing reuse solutions is increasing. Over the past few years, we have begun to develop and test reusable packaging solutions, including deposit systems, to see how we can best transform the customer experience. We were the first retailer to launch LOOP in 2019, which has enabled us to work with our national brand suppliers to provide customers their favourite products in reusable packaging. Once clients have finished with the product, they return the packaging to Carrefour, where it is cleaned through one of our partners and then used again. We have decided to focus on one market, France, starting with e-commerce. After this experience, we decided to launch Loop products in-store as it would facilitate consumers to discover this model more easily. Today, we offer 42 products in 11 stores across France. In 2025, our ambition is to offer 1000 products in 500 stores in France equipped with reusable packaging solutions by 2025.

We also launched a campaign — *bring your own container* — to encourage customers to bring their own reusable containers to package their purchases from traditional food counters. Customers are very supportive of the reuse models and find the solutions innovative. However, the model in its current form does not lend itself to mainstream use because it remains inconvenient for customers. People need to prepare and think ahead, for example to come with containers. It is also difficult to gauge the right amount of the product. In addition,

there are sanitary constraints, and keeping reuse systems running requires increased maintenance from in-store staff who must ensure proper cleaning. Another issue is that the selection of products in reusable packaging is quite limited — consumers do expect more variety. There must also be more incentives for customers to adopt this model; this includes looking at the price point of products in reusable and recyclable packaging. Customers also need to be informed about these models. This is where retailers can play an interesting role as consumers can learn more about these models in store and test them out. When customers arrive in store, they can learn about new products and talk to representatives in store who can explain a new model or product.

Ultimately, reuse systems and deposit schemes will only work if they find enough scale. We need different actors — packaging producers including glass manufacturers, suppliers, retailers, logistics providers and governments — to work together and support the expansion of this model. In France, emerging legislation will increasingly create the conditions for this model to expand and create new norms. Our suppliers — the brands sold in store — must continue to provide products that consumers buy and widen the range of sustainably packaged products which requires investment. Packaging manufacturers must ensure that materials are fit for reuse and convenient for customers. For glass producers this means using technology that will make glass more resistant and guarantee many uses while ensuring that materials are as light as possible. As retailers, we can contribute to this effort through facilitating tests in store with brands for our customers. We must make reuse as convenient as possible to pave the way for mainstream use. ●

Policies should go beyond setting targets and quotas



Adeline FARRELLY
*Secretary General, FEVE –
The European Container Glass
Federation*

PROFILE



- The FEVE was founded in 1977 and headquartered in Brussels, as an international not-for-profit association.
- It currently numbers 60 company members and 22 corporate groups.
- In June 2020, FEVE, along with other glass industry stakeholders, launched the pan-European 'Close the Glass loop' platform, with a goal of supporting the industry to reach 90% glass collection rates by 2030.

IN CONVERSATION WITH STEFANO CASSANO, CORPORATE DIRECTOR OF PRODUCTION MATERIALS PURCHASING, VERALLIA AND CHAIRMAN OF CIRCULAR ECONOMY GROUP, FEVE

Why are we seeing the glass industry's attitude to reuse changing?

A. F. In some ways reuse is a very established idea for the industry. Returnable models for glass packaging have existed for a very long time and there are many examples of reusable glass packaging systems in place across Europe today. Glass dominates the refillable beverage containers market, accounting for 22% of packaging placed on the market in 2017 in the beer, soft drinks, and mineral water categories (Global Data), which are the key segments for refillable beverage containers

(representing 96% of refillable beverage containers in 2017). And let's remember, glass bottles can be reused up to 40 times and still be recycled at the end of their life.⁽¹⁾

But in recent years the container glass industry has embarked on a major revolution of the production process, starting its journey towards a truly circular, resource-efficient and low carbon economic model, mobilising major sector-wide initiatives such as Close the Glass Loop.⁽²⁾ To really support and carry on through this transition a step change is needed at sector level. Reuse is not just about a product issue — it requires a new system.

What would that new system look like?

A. F. Reusable packaging must be able to circulate effectively within this system – from the fillers to the retailers, to the consumers and the same way back. If the supply chain that products need to move through is short, reuse can be an efficient and sustainable solution, provided there is a consumer culture supporting reuse and adequate logistics are in place. For instance, reusable glass packaging already operates on local deposit-refund schemes in Germany, the Netherlands, Croatia, or the Czech Republic. Scaling up reuse will require new business models and significant supply chain transformation, including efficient cleaning facilities.

What makes embedding reuse so complex for the industry?

A. F. Putting reusable packaging solutions on the market requires activating different levers simultaneously. Fillers decide to use one-way or reusable products based on thorough considerations of logistics, environmental, technical, industrial, marketing and consumer aspects of reuse compared to one-way packaging. Both options – one-way and reusable glass packaging – have distinct characteristics and reuse is not suited for all market conditions.

The weight, shape, and size of company-branded or standardised bottles need to be taken into consideration. A delicate balance needs to be found between standardisation of packaging formats, facilitating return logistics, and the legitimate consideration around customer acceptance, brand value and brand recognition, which all play into the ideas and innovations we are now seeing around reuse.

And then, there is the investment element. Reuse systems built from scratch require considerable upfront investment, for instance into building up and maintaining the pools of reusable glass >>>

POLICY CONTEXT

A NEW REGULATORY FRAMEWORK TO STIMULATE REUSE IN EUROPE?

The quantity of packaging generated within the European Union has seen a general upward trend both in absolute terms and in terms of packaging waste generated per capita since the introduction of the EU Packaging and Packaging Waste Directive (PPWD) in 1994.⁽¹⁾ According to Eurostat, around 66 million tonnes of packaging waste were generated in 2009, and an estimated 79 million tonnes in 2019 – representing a 20% growth in tonnage of packaging waste generated in the EU in this period.⁽²⁾ Even when accounting for population growth within the EU, packaging waste generated per capita increased from 150 kg per person in 2009 to 177 kg per person in 2019 representing a 18% increase.

The PPWD is central to the EU's legislation on packaging. The directive's objectives are two-fold:

1. facilitating the functioning of the internal packaging market.
2. working to continuously improve the environmental performance of packaging.

Currently, EU member states are required to take measures to encourage the share of reusable packaging and of systems to reuse packaging. They can do this by setting targets, using deposit-return schemes or through economic incentives. Since 2020, member states are also obliged to report to the EU Commission on reusable packaging. First official reports are due to be submitted in 2022.

Following the announcement of the European Green Deal⁽³⁾ and Circular Economy Action Plan⁽⁴⁾ in 2019 and 2020, respectively, the PPWD is currently undergoing a major review, which is due to conclude in 2022.

The Commission is reviewing the PPWD to better link the design of packaging with its end-of-life. The aim is to stimulate reuse and packaging waste prevention, to ensure that by 2030, all packaging in the EU is either reusable and/or recyclable in an economically viable manner, in line with the goals set by the Circular Economy Action Plan.

The EU is looking to eliminate the packaging that the market does not need and stimulate innovation to ensure the packaging we do need is recyclable/reusable and keeps circulating in the economy for as long as possible. This is in line with the vision of many big players in the packaging sector to use more reusable and refillable packaging by 2030.

1. European Union (1994), European Parliament and Council Directive, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01994L0062-20150526&from=EN>

2. Eurostat (2021), Packaging waste statistics, available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Packaging_waste_statistics

3. European Commission (2019), A European Green Deal, available at: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en#documents

4. European Commission (2020), Circular Economy Action Plan: For a cleaner and more competitive Europe, available at: https://ec.europa.eu/environment/pdf/circular-economy/new_circular_economy_action_plan.pdf



As an industry we have seen ‘reuse’ become a critical consideration for policymakers. But glass reuse requires new system thinking and a constructive dialogue with policymakers and the value chain.

►► bottles, the transport crates, the filling infrastructure, and the setup of return schemes.

The success of reuse systems also depends on the cooperation between competing brands, as well as with retailers, which is needed to set up and manage deposit schemes and collect and stock empty bottles.

How about policymakers and regulators, how can they play their role most constructively?

A. F. Today, due to the backlash against single-use plastics, reuse packaging is high on policymakers’ agenda. At EU level, the European Green Deal and Circular Economy Action Plan call for further action on ‘waste prevention’ and a legislative review of the Packaging and Packaging Waste Directive is currently underway, which is looking at targets and measures on waste generation and reuse.

This goes into the right direction, but the policy debate tends to focus on setting targets and quotas – for reusable packaging overall or indeed for specific product categories. Such measures can be unhelpfully reductive or blunt, given the complexities and varied dynamics of the packaging markets and consumption habits.

What is important to consider now if the aim is to effectively promote reusable consumer packaging solutions?

A. F. We need a thorough discussion with stakeholders on the environmental, socio-economic, consumer impacts of consumer reuse systems, on the materials compatible with reuse systems, with a deep-dive into the benefits and drawbacks

of reuse systems in comparison with one-way systems considering various parameters and applications. This has to be the basis on which we can jointly and effectively promote reusable packaging solutions.

An important part of this discussion is to ensure that everyone speaks the same language — for example, we need a clear definition of the “consumer reuse” we are looking to promote. We might agree, for example, that this would only cover products specifically conceived and designed to accomplish a minimum number of trips or rotations within their life cycle and for which a well-functioning system is in place.

What should the glass industry do now to help stimulate reuse, where it does make sense to do so?

A. F. Introducing consumer reuse systems represents a systemic change of business models and supply chains, which requires a constructive dialogue between policymakers and the whole value chain from packaging producers, brands, retailers and NGOs. As an industry, we can play a constructive role by convening the value chain and providing a forum to develop collective understanding of the environmental, socio-economic, and consumer safety impacts of reuse systems, exchange best practices, and set out a joint vision for reuse as part of the packaging mix. ●

1. FEVE (2021), Vision: Environment, available at: <https://feve.org/about-glass/visions/environment/environment-vision/#:~:text=In%20the%20past%2015%20years,recycled%20for%20the%20first%20time.>

2. Close the Glass Loop (2021), Close the Glass Loop, available at: <https://closetheglassloop.eu/>

Looking to the glass industry for action

CALLS FROM CONTRIBUTORS ON HOW TO REIMAGINE GLASS REUSE



ANDREW MORLET,
CEO, Ellen MacArthur Foundation

“Switching to reusable packaging often presents challenges to the accepted ways of operating. To succeed with this kind of innovation, organisations, including Verallia, need internal change agents with ideas that push the boundaries. Companies pioneering upstream innovation have a culture that supports these intrapreneurs to envisage ways to create better products or reach new markets, even when it conflicts with existing business priorities.”



THIERRY RAYNA,
Professor of Innovation Management,
École Polytechnique and Institut
Polytechnique de Paris

“A successful ‘reboot’ of glass reuse will require completely rethinking what we know about it. That’s what will be required to make reuse work in synergy with current and upcoming trends (e.g. the rise of home delivery or local production of food), ‘competing’ practices (i.e. recycling) and to drive adoption from consumers and other businesses. While no ‘silver bullet’, technology can take on a critical role — making glass reuse as ‘painless’ and seamless as possible.”



BJÖRN KNOOP,
Head of Corporate
Communication
and Sustainability,
fritz-kola

“Glass producers need to promote reuse in their own business models and communication. Glass producers also need to work on recycling rates and recycled glass content. They need to improve energy efficiency and work towards carbon neutrality in glass production and further explore possibilities to reduce weight and material use.”



VIRGINIE HELIAS,
Chief Sustainability Officer,
Procter & Gamble

“How can the glass industry make reusable bottles and containers irresistible? Check your drawers for those ideas you might have previously dismissed — ideas that make glass fit for reuse and desirable for people to use infinitely. And help ensure people are incentivised to return their packaging — sustainability is not yet a strong enough motivation for the extra steps reuse requires.”



TOM SZAKY,
Founder and CEO,
TerraCycle & LOOP

“Glass is the primary packaging material returned and reused in the container deposit. The industry has a huge historic knowledge base and existent supply chain, to lead the charge in bringing reuse into the future. One glaring gap to tackle is the lack of global safety and design standards for reuse. Collaboration will be vital for organisations who have great intentions to scale reuse but cannot access the knowledge to optimise safety.”



HANS BAXMEIER,
Managing Director, GeMeMa –
Gesellschaft für Mehrwegmanagement
GmbH & Co. KG

“We want more bottlers to join GeMeMa – that’s how we can boost reuse rates. The glass industry can play an important role – taking steps to actively promote reuse. Glass manufacturers developed the new GeMeMa 0.33 l bottle together with us. We need more such cooperation. However, the glass industry is reaching a bottleneck because there is not enough production capacity. Production capacity can only be built up if there is planning security and GeMeMa could play an important role here going forward bringing more participants into the pools.”



DANIEL SANDRINI,
Operations Director, Companhia
Muller de Bebidas

“We believe that the processes for manufacturing new bottles, reusing and recycling are complementary. We want bottles to be able to support a longer life cycle and multiple reuse loops. Glass manufacturers have a key role to play in helping us scale up reuse schemes in Brazil.”



ANTOINE ROBICHON,
Deputy CEO and COO,
CITEO

“Glass manufacturers can participate in the initiatives and work carried out by business and their representatives. At CITEO, we have worked with 60 food companies on defining the future of standardised packaging for France. Glass manufacturers can actively contribute to the debate and be part of the consultations on reusability, using their technical expertise. Companies like Verallia need to continue to innovate to develop packaging solutions that are efficient (eco-design) and appealing (consumer marketing).”



TOBIAS BIELENSTEIN,
Head of Public Affairs,
Sustainability
& Communication,
Genossenschaft
Deutscher Brunnen (GDB)

“Refillable packaging is in fierce competition with single-use recyclable packaging and can only assert itself through constant development and improvement. The glass industry is a very important partner for all refillable systems. We will need new refillable solutions for food and other fast moving consumer goods. The glass industries’ experience is needed to develop and set up these systems. Success will depend on whether the glass industry moves quickly and consistently.”



EMMANUEL AUBERGER,
Founding President,
Uzaje

“With plastic manufacturers developing reusable alternatives (reusable PET, plastic containers), the competition for the best reusable packaging is underway. For a glassmaker, the benefit is a potential return to markets in which plastic and other food cartons currently dominate, including fruit juices, dairy products, sauces, condiments, etc., but also wine where glass offers a substitute for ‘bag-in-box’ packaging. It is now time for Verallia and the rest of the glass industry to focus on developing reusable packaging solutions.”



EMILY LIN,
Global Packaging Sustainability
Program Manager, Diageo

“We have set ambitious goals to decarbonise our supply chain and in doing so we need to have laser focus on our packaging materials, particularly the glass we use. It is critical for the industry to decarbonise their operations and partner to design glass for a circular supply chain model to make a meaningful impact towards commitments.”



SCARLETTE ELIZÉE,
Sustainability Outreach
Lead, Carrefour

“Packaging manufacturers must ensure that materials are fit for reuse and convenient for customers — this requires taking risks and investing in technology. Glass producers need the technology to ensure a maximum number of reuse cycles are possible at the lightest weight and without compromising the quality of the material. As retailers, we can contribute by facilitating tests in store with brands for our customers.”

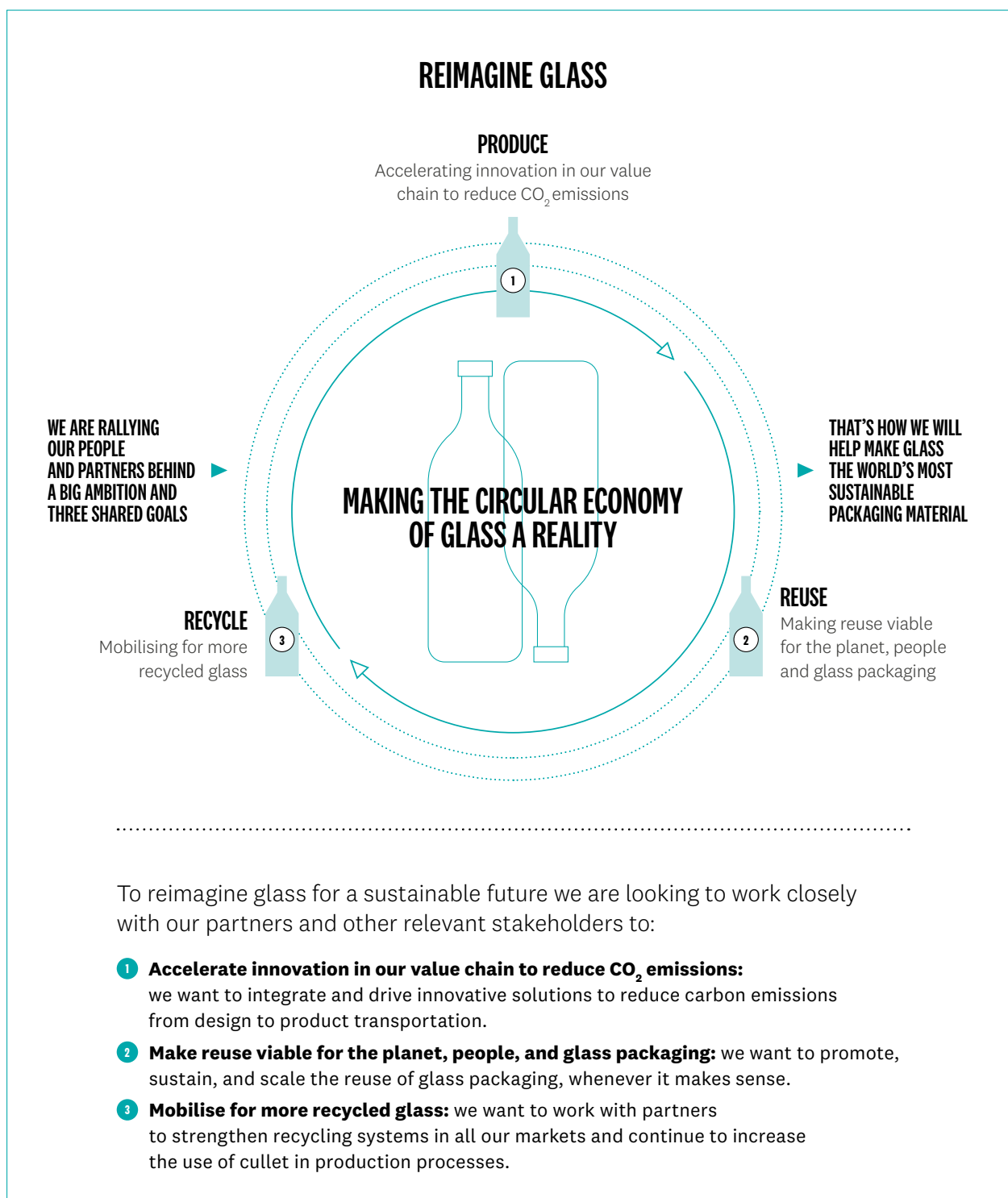


ADELINE FARRELLY,
Secretary General,
FEVE - The European
Container Glass
Federation

“Introducing consumer reuse systems requires a constructive dialogue between policymakers and the whole value chain from packaging producers, brands, retailers and NGOs. As an industry, we can play a constructive role by convening the value chain and providing a forum to develop a collective understanding of the environmental, socio-economic, and consumer safety impacts of reuse systems and set out a joint vision for reuse as part of the packaging mix.”

Verallia's commitment to action

With our purpose — reimagine glass for a sustainable future — we have committed to accelerating the transition to sustainable packaging. In 2020, Verallia set out a big ambition — making the circular economy of glass a reality — and three priority action areas to focus our efforts in achieving this:



MOVING FORWARD ON GLASS REUSE

We would like to thank all of our contributors to this paper for sharing their ideas and candid calls for action to us as glass manufacturers. This Stakeholder Perspectives Series on ‘Reimagining reuse for the circular economy of glass’ has offered us many valuable insights and ideas to explore and action.

To make reuse viable for the planet, people, and glass packaging we will:



1. PUSH FOR EXPERIMENTATION

Glass reuse at scale needs new thinking, practices, and business models. The ‘traditional’ reuse model might still work in some contexts, but we need breakthrough practices to take reuse to the next level where it makes sense to do so.

So, we are setting up the first **‘Reuse Lab’** to test and experiment with different solutions. That’s how we’ll establish what works and what doesn’t. The **‘Seven action areas to scale glass reuse’** (see page 8) provide us with the framework for our thinking.

The **‘Reuse Lab’** will be led by a **dedicated team** within the business including a set of regional reuse experts and **report regularly into the Verallia Sustainability Committee.**

We have made a commitment to set up a Reuse pilot in France by 2025 that we can draw valuable comparisons and lessons from.



2. PARTNER TO STIMULATE INNOVATION

Overcoming the operational and behavioural challenges of glass reuse and making it a replicable and scalable model are not something that Verallia can tackle on its own.

The Stakeholder Perspectives Series on reuse has raised a set of **priority questions** that we want to dive deeper into. These include:

- ▶ How can we leverage technology to make reuse simple and rewarding for consumers and businesses?
- ▶ How can we solve for the product design conundrum: more durability, less weight, and same safety / quality?
- ▶ How can we standardise the reuse process and infrastructure to make reuse simple and efficient?

To keep moving forward on answering these and further important questions we are **actively seeking conversations with potential partners across the stakeholder ecosystem** (incl our customers, retailers, local governments) and circular economy experts.



3. FOLLOW UP AND SHARE WHAT WE LEARN

As we continue this journey, we will keep sharing what we learn, tell you about our challenges, but also our ideas and of course any new solutions discovered on the way. We will take stock so that we can push the boundaries again and again. For us, sharing is about looking ahead and continuing to change the game.

We believe the **‘Reuse Lab’**, launched in March 2022, offers us a format to return to periodically (in person and / or digitally) to share, raise new questions and learn collaboratively.

Acknowledgements & Resources



ABOUT THIS PUBLICATION

Reimagining reuse for the circular economy of glass: Stakeholder Perspectives Series is a paper conceived by Verallia's Sustainability team, produced and published by Verallia Group in 2022.

Verallia welcomes enquiries and feedback regarding the topics discussed in this paper. To pick up the conversation or to get in touch about potential ideas for collaboration to make the circular economy of glass a reality please contact: corporate.communication@verallia.com

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We would like to thank all of our contributors and their teams for sharing their ideas and working with us to make this paper possible: Tom Szaky and Blandine Surry at **LOOP / TerraCycle**; Andrew Morlet and Stella Chavin at the **Ellen MacArthur Foundation**; Professor Thierry Rayna at **École Polytechnique**; Virginie Helias at **P&G**; Scarlettte Elizée at **Carrefour**; Björn Knoop at **fritz-kola**; Daniel Sandrini, Simone Sayuri Nakazone and Celso Luiz Marquesini at **Companhia Cia Muller de Bebidas**; Tobias Bielenstein at **Genossenschaft Deutscher Brunnen (GDB)**; Hans Baxmeier at **GeMeMa – Gesellschaft für Mehrwegmanagement GmbH & Co. KG**; Adeline Farrelly and Vanessa Chesnot at **FEVE – the European Container Glass Federation**; Antoine Robichon and Sophie Nguyen at **CITEO**; Emily Lin at **Diageo**; and Emmanuel Auberger and Gonzague Gru at **Uzaje**. Your candid insight, based on years of expertise, is not only greatly appreciated by Verallia, but will also be invaluable to the industry as it takes action on glass reuse.

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FURTHER READING ON REUSE

The below offers a non-exhaustive list of key resources on reuse and the circular economy, which aided the research and curation of this report.

- Accenture (2020)**, Winning in a circular economy, available at: https://www.accenture.com/_acnmedia/PDF-117/Accenture-Winning-In-A-Circular-Economy-Executive-Summary.pdf
- ADEME (2017)**, Analyse de 10 dispositifs de réemploi-réutilisation d'emballages ménagers en verre, available at: <https://librairie.ademe.fr/consommer-autrement/1042-analyse-de-10-dispositifs-de-reemploi-reutilisation-d-emballages-menagers-en-verre.html>
- Centro de Innovación y Economía Circular CIEC (2021)**, Transitioning towards a circular economy: Opportunities and steps for Latin America, available at: <https://ciecircular.com/wp-content/uploads/2021/08/Transitioning-towards-a-circular-economy-opportunities-and-steps-for-Latin-America.pdf>
- CITEO, ADEME (2021)**, Les 34 projets Lauréats de l'AMI Réemploi Verre (Reuse projects in France), available at: [https://bo.citeo.com/sites/default/files/2021-06/Les%2034%20projets%20laur%C3%A9ats%20de%20l'AMI%20R%C3%A9emploi%20verre%20ADEME%20Citeo%20Vdef%20\(1\).pdf](https://bo.citeo.com/sites/default/files/2021-06/Les%2034%20projets%20laur%C3%A9ats%20de%20l'AMI%20R%C3%A9emploi%20verre%20ADEME%20Citeo%20Vdef%20(1).pdf)
- Closed Loop Partnerships (2021)**, Pathway to Scale for Reusable Packaging Models, available at: <https://www.closedlooppartners.com/closed-loop-partners-releases-groundbreaking-report-on-the-pathway-to-scale-for-reusable-packaging-models/>
- Deutsche Umwelthilfe (2019)**, Deposit systems for single-use and refillable beverage packaging, available at: https://www.reloopplatform.org/wp-content/uploads/2019/11/HENRIETTE-SCHNEIDER_en.pdf
- Ellen MacArthur Foundation (2019)**, Reuse: Rethinking Packaging, available at: <https://emf.thirdlight.com/link/mtrsnli6m4q0-wm25fb/@/preview/1?o>
- European Commission (2019)**, The European Green Deal, available at: https://ec.europa.eu/info/sites/default/files/european-green-deal-communication_en.pdf
- European Commission (2020)**, Circular Economy Action Plan, available at: https://eur-lex.europa.eu/resource.html?uri=cellar:9903b325-6388-11ea-b735-01aa75ed71a1.0017.02/DOC_1&format=PDF
- FEVE (2020)**, Position on the new circular economy action plan, available at: <https://feve.org/wp-content/uploads/2020/06/FEVE-position-Circular-Economy-Action-Plan-May-2020.pdf>
- GreenBiz (2019)**, Key ingredients for scaling circular reuse business models, available at: <https://www.greenbiz.com/article/key-ingredients-scaling-circular-reuse-business-models>
- Greenpeace New Zealand (2020)**, Reusable Beverage Packaging and Refillable Beverage Delivery Systems in New Zealand: Discussion Document, available at: <https://www.greenpeace.org/aotearoa/publication/reusable-beverage-packaging-and-refillable-beverage-delivery-systems-in-new-zealand-discussion-document/>
- Greenpeace USA (2020)**, Reusables Are Doable, available at: <https://www.greenpeace.org/usa/reports/reusables-are-doable/>
- McKinsey & Company (2022)**, Sustainability in packaging: Global regulatory development across 30 countries, available at: <https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/sustainability-in-packaging-global-regulatory-development-across-30-countries?cid=other-empl-alt-mip-mck&hpid=198399fb-3014-48bd-a421-65901ad600e8&hctky=11508268&hlkid=feld2810245c40818f560a28ac82eb80>
- McKinsey & Company (2021)**, Sustainability in packaging: Inside the minds of global consumers report, available at: <https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/sustainability-in-packaging-inside-the-minds-of-global-consumers>
- Umwelt Bundesamt (2021)**, Bundesweite Erhebung von Daten zum Verbrauch von Getränken in Mehrweggetränkeverpackungen, Bezugsjahr 2019, available at: <https://www.umweltbundesamt.de/publikationen/bundesweite-erhebung-mehrweggetraenkeverpackungen-2019>
- WRAP (2010)**, Single Trip or Reusable Packaging - Considering the Right Choice for the Environment, available at: <https://archive.wrap.org.uk/sites/files/wrap/FINAL%20Reusable%20Packaging%20Factors%20Report.pdf>
- Zero Waste Europe (2020)**, Reusable vs Single-use packaging: a review of environmental impacts, available at: https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe_reloop_executive-summary_reusable-vs-single-use-packaging_-_a-review-of-environmental-impact_en.pdf

FACTS AND FIGURES SHAPING THE CONVERSATION ON REUSE TODAY

Page 04 – The challenge in the world

- Breakthrough Energy (2021)**, Breakthrough Energy, Getting to Zero, available at: <https://www.breakthroughenergy.org/our-challenge/getting-to-zero#:~:text=Every%20year%2c%20we%20add%2051,humankind%20has%20ever%20taken%20on>
- Eurostat (2021)**, Packaging Waste statistics, available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Packaging_waste_statistics#Waste_generation_by_packaging_material
- Food and Agriculture Organization of the United Nations (2021)**, Food systems account for more than one third of global greenhouse gas emissions, available at: <https://www.fao.org/news/story/en/item/1379373/icode/>
- Intergovernmental Panel on Climate Change (2021)**, 6th annual assessment report: Climate Change 2021, The Physical Science basis, summary for policymakers, available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf
- nature (2021)**, Glass is the hidden gem in a carbon-neutral future, available at: <https://www.nature.com/articles/d41586-021-02992-8>
- World Bank (2018)**, What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050, available at: <https://www.worldbank.org/en/news/press-release/2018/09/20/global-waste-to-grow-by-70-percent-by-2050-unless-urgent-action-is-taken-world-bank-report>

Page 05 – Reuse as part of the solution

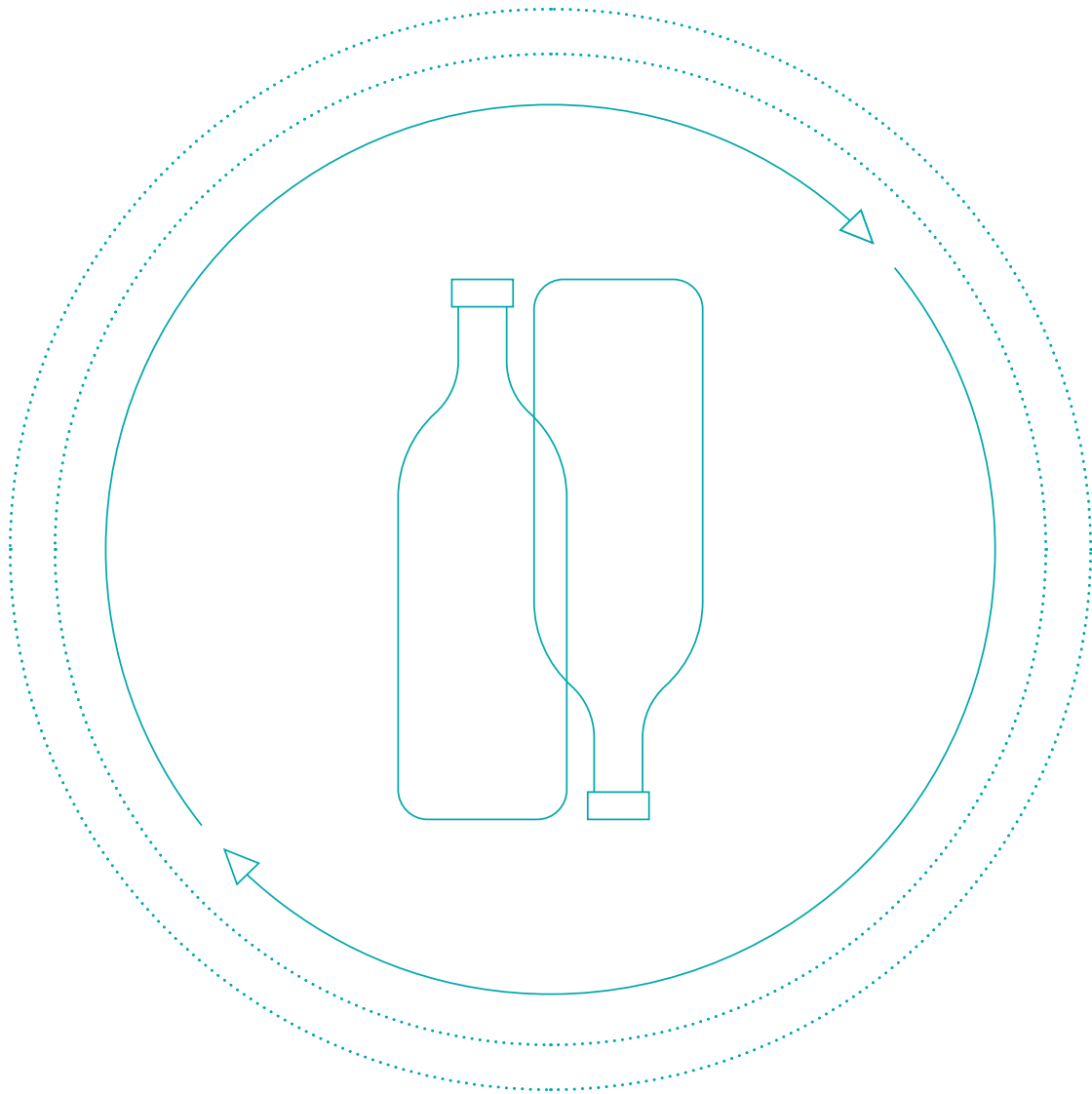
- FFACT and TPC360 for FEVE (2021)**
- Zero Waste Europe (2020)**, Reusable vs Single-use packaging: a review of environmental impacts, available at: https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe_reloop_executive-summary_reusable-vs-single-use-packaging_-_a-review-of-environmental-impact_en.pdf

Page 06 – Consumer expectations

- Accenture (2019)**, Accenture Chemicals Global Consumer Sustainability Survey 2019, available at: <https://newsroom.accenture.com/news/more-than-half-of-consumers-would-pay-more-for-sustainable-products-designed-to-be-reused-or-recycled-accenture-survey-finds.htm>
- McKinsey & Company (2020)**, Sustainability in packaging: Inside the minds of global consumers report, available at: <https://www.mckinsey.com/industries/paper-forest-products-and-packaging/our-insights/sustainability-in-packaging-inside-the-minds-of-global-consumers>

Page 07 – The reuse opportunity

- Close the Glass Loop (2020)**, Close the Glass Loop launched with 90% glass collection target, available at: <https://www.britglass.org.uk/news-comment/close-glass-loop-launched-90-glass-collection-target>
- Ellen MacArthur Foundation (2020)**, The South African Plastics Pact, available at: <https://ellenmacarthurfoundation.org/the-south-african-plastics-pact>
- Ellen MacArthur Foundation (2020)**, Towards the circular economy Vol. 1: an economic and business rationale for an accelerated transition, available at: <https://ellenmacarthurfoundation.org/towards-the-circular-economy-vol-1-an-economic-and-business-rationale-for-an>
- Ellen MacArthur Foundation (2021)**, Global Commitment 2021 Signatory Report, The Ministry of Infrastructure and Waste Management, the Netherlands, available at: <https://ellenmacarthurfoundation.org/global-commitment/signatory-reports/gov/the-ministry-of-infrastructure-and-water-management-the-netherlands>
- Ellen MacArthur Foundation (2021)**, Global Commitment 2021 Signatory Report, Government of the United Kingdom, available at: <https://ellenmacarthurfoundation.org/global-commitment/signatory-reports/gov/government-of-the-united-kingdom>
- FEVE (2018)**, Record collection of glass containers for recycling hits 78% in the EU, available at: <https://feve.org/about-glass/statistics/>
- FFACT and TPC360 for FEVE (2021)**
- Food Packaging Forum (2019)**, Call for binding packaging quotas in Germany, available at: <https://www.foodpackagingforum.org/news/call-for-binding-packaging-quotas-in-germany>
- Greenpeace (2021)**, The world is ditching plastics with reuse and refill laws and practices, available at: <https://www.greenpeace.org/international/story/51843/plastics-reuse-and-refill-laws/>
- Towards Osaka Blue Ocean Vision (2021)**, The Republic of Korea, Actions and Progress on Marine Plastic Life, Ministry of Environment of Korea, available at: [https://g20mpl.org/partners/republicofkorea#:~:text=The%20ministry%20of%20Environment%20of,use%20plastic%20products%20until%202027.&text=\(2018-2027\)-,Brief%20description%3A,Framework%20act%20on%20resource%20circulation%E2%80%99](https://g20mpl.org/partners/republicofkorea#:~:text=The%20ministry%20of%20Environment%20of,use%20plastic%20products%20until%202027.&text=(2018-2027)-,Brief%20description%3A,Framework%20act%20on%20resource%20circulation%E2%80%99)
- Umwelt Bundesamt (2019)**, Nationwide collection of data on the consumption of beverages in reusable beverage containers, available at: <https://www.umweltbundesamt.de/publikationen/bundesweite-erhebung-mehrweggetraenkeverpackungen-2019>
- Zero Waste City (2020)**, Mandatory Packaging Reporting, available at: <https://zerowastecity.com/wp-content/uploads/2020/08/PPP-NEA-MPR-Know-How-Rev5.pdf>



Reimagining glass for a sustainable future.