



# Bag-in-Box<sup>®</sup> a sustainable solution

Highlights 2022



# At Smurfit Kappa, we are proud to **create,** **protect and care**



At Smurfit Kappa, we are proud to be one of the world's leading providers of paper-based packaging. We believe that paper-based packaging can be one of the answers to the challenges facing our planet.



We create innovative and sustainable paper-based packaging solutions for our customers, we protect products in transit and precious resources for future generations, while caring for each other, the environment and the planet.



**The result is packaging that is better for the planet.**

## Our Vision

To be a globally admired business, dynamically and sustainably delivering secure and superior returns for all stakeholders.

## Our Commitment

To being an impactful business and supporting a greener, bluer planet.

## Our Long-Term Ambition

To have at least net zero emissions by 2050.

## Our Priorities

**Our ambition of sustainable growth is based on three pillars: Planet, People, and Impactful Business.**

## Our Culture

**People are at the heart of everything we do. We have a strong and positive culture that is based on our values of Safety, Loyalty, Integrity and Respect.**

# 30 years of dynamic growth driven by sustainable imperatives

*“At Smurfit Kappa, sustainability is at the heart of everything we do, and Bag-in-Box® is no exception. We strive for continuous improvement through innovation, fostered by our passion for people and a strong commitment to our customers’ needs.”*



**Thierry Minaud**  
CEO SK Bag-in-Box

## What sets us apart in Bag-in-Box

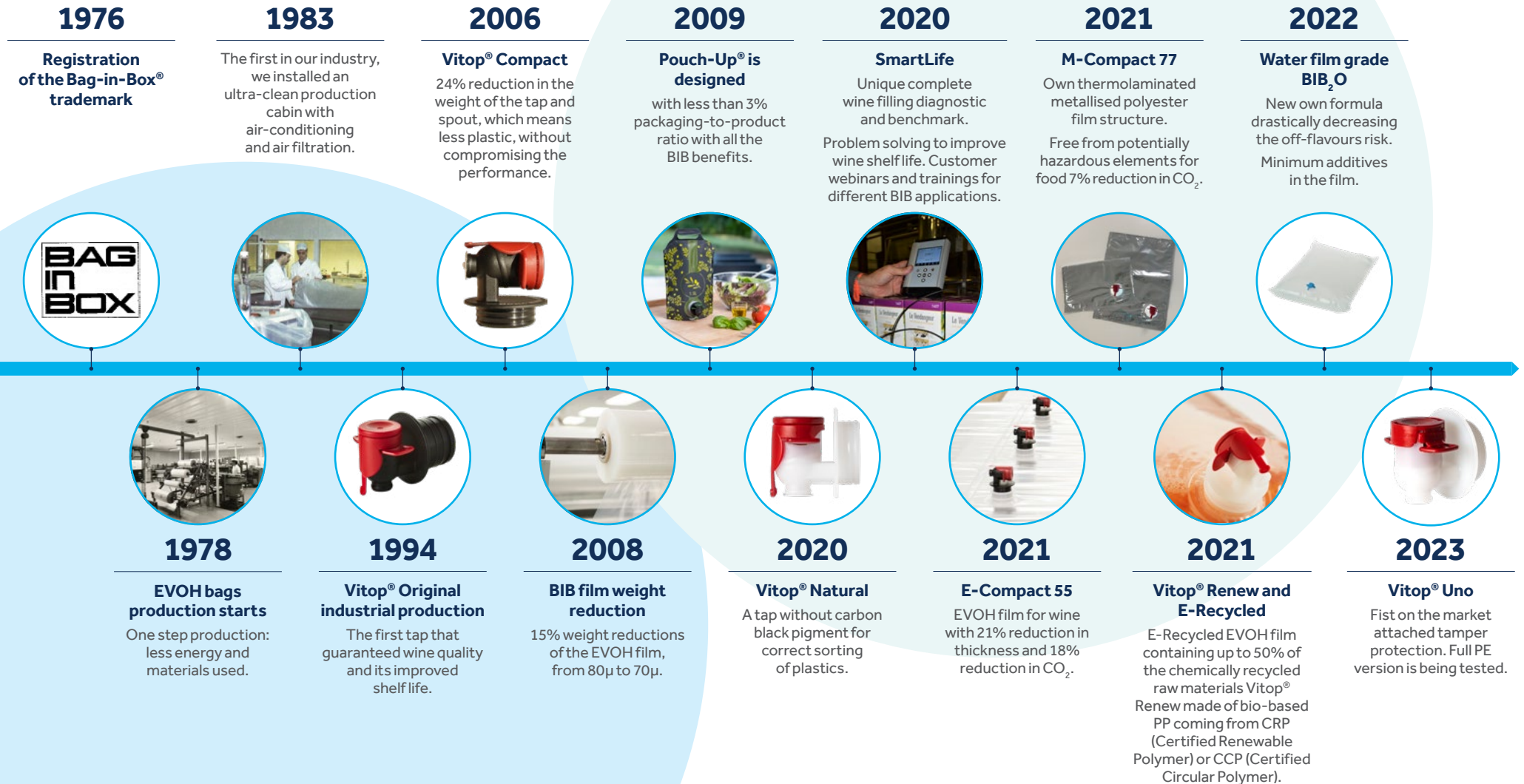
|  |   |   |
|--|---|---|
| <p><b>Our people</b></p> <p>The passionate spirit is what unites us all in the Bag-in-Box (“BIB”) division. It is hard to find a team more committed to their product and customers.</p>   | <p><b>Our sustainable innovations</b></p> <p>We deliver a lot of sustainable innovations designed to reduce packaging weight, increase recyclability of our bags, using recycled and renewable materials.</p> | <p><b>Our integrated model</b></p> <p>Our vertical integration drives efficiency, security of supply and enables sustainability across the entire value chain.</p>  |
| <p><b>Our customer support</b></p> <p>We have a dedicated international R&amp;D and quality team ready to offer and trial fit-for purpose packaging solutions for existing and new BIB applications.</p>                                       |   | <p><b>Our unrivalled quality and food safety</b></p> <p>We ensure the highest BIB quality and rigorous food safety in our top class HACCP-compliant plants.</p>   |
| <p><b>Our complete Bag-in-Box® packaging systems</b></p> <p>We are proud to be one of the few providers of complete Bag-in-Box® packaging systems: films, taps, bags, boxes, accessories, filling equipment, and a wide range of services.</p> |   | <p><b>Our collaboration</b></p> <p>We focus on new market demands and changing regulations. Our R&amp;D teams work in strong partnership with different packaging associations on eco-design, recyclability, and we take part in European Commission circular economy projects.</p> |

## Don’t take our word for it, take theirs

Some examples of our partnership



# Timeline of our sustainable innovation development in Bag-in-Box®



# 2022 Bag-in-Box highlights

➔ Find out more about the progress Smurfit Kappa Group has made in our 2022 Sustainable Development Report [Click here : https://lc.cx/PX7bdN](https://lc.cx/PX7bdN)

## 1

more SK BIB plant in Spain.



End of 2022 we have acquired Pusa Pack, a Bag-in-Box packaging plant specialising in the manufacture of large-capacity flexible bags, sized from 200 to 1,500 litres, which are used for the storage and transport of bulk food, cosmetics, pharmaceutical and other liquid and semi-liquid products.

## 22

SMARTLife webinars presented in 2022 for customers from Europe, North and South America, and Australia.

## 9

filling performance diagnostics provided at customer production sites in 2022.



## 35

tonnes of metallised materials rejects sent to chemical recycling (pyrolysis) from June 2022 in SK Bag-in-Box Ibi, Spain.

## 3.6

tonnes of film was recovered from the lateral trimming of the produced reels thanks to the Recotrim recycling machine installed in SK Bag-in-Box Ibi, Spain in 2022. This figure is set to rise to 17.4 tonnes when all the film extrusion machines are connected to the recycling process.

## 1st

year without accidents was celebrated in Vitop® US in 2022.

## 0

accidents in SK Bag-in-Box Canada since their start in 2004.



## 5.7%

annual savings on total energy consumption in each production process (bags, taps and film) thanks to Lean Manufacturing activities launched in SK Bag-in-Box Ibi, Spain, in 2022.



## Up to 61%

reduction in consumption after replacing all lighting with LED in SK Bag-in-Box Ibi, Spain, SK Bag-in-Box Baguin, Argentina, SK Bag-in-Box Epernay, France.



## 97.7

tonnes/year reduction of film extrusion scrap thanks to the process optimisation and waste management in SK Bag-in-Box Ibi, Spain.



# Long-term ambition, delivering today

Globally, citizens are asking tougher questions and becoming a strong force in the drive for climate and societal change in recent years. The focus on how we treat our planet, how we create a more inclusive world for everyone and support equality across all communities has never been so high on people's agendas.

## Key for Group's Sustainability Strategic Priorities



Planet



People



Impactful Business

### Smurfit Kappa Group's Better Planet 2050 Commitments and Progress\*\*

| Category                                       | Climate Change   | Forest  | Water   | Waste  | Health and Safety  | People   | Communities  |
|--|--|---|---|--|--|--|--|
| Targets  | <b>Net zero</b><br>our ambition is to have at least net zero emissions by 2050 with a 55% reduction in fossil fuel emissions intensity by 2030 | <b>&gt;95%</b><br>packaging solutions sold as Chain of Custody certified to customers by 2025 | <b>60%</b><br>reduction in Chemical Oxygen Demand intensity by 2025<br><b>1%</b><br>reduction of our water usage intensity annually | <b>30%</b><br>reduction in waste to landfill intensity by 2025 | <b>at least 5%</b><br>reduction in Total Recordable Injury Rate annually | <b>25%</b><br>of management positions held by women by 2024          | <b>€24 million</b><br>will be donated between 2020-2025 to support social, environmental and community initiatives |
| Progress in 2022*                              | <b>43.9%</b><br>reduction in CO <sub>2</sub> emissions since 2005  | <b>94.3%</b><br>packaging solutions sold as Chain of Custody certified in 2022                | <b>36.9%</b><br>reduction in Chemical Oxygen Demand since 2005<br><b>2.1%</b><br>reduction of our water usage in 2022               | <b>24%</b><br>reduction in waste to landfill since 2013        | <b>13.6%</b><br>reduction in Total Recordable Injury Rate in 2022        | <b>23.5%</b><br>of management positions held by women at end of 2022 | <b>€18.4 million</b><br>donated since 2020   |
| Link to Sustainability Strategy                |  |   |   |  |  |  |  |
| Link to Sustainable Development Goals ('SDGs') |  |   |   |  |  |  |  |

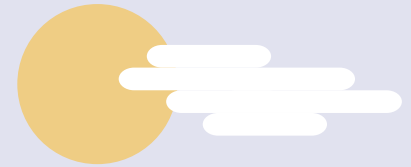
\* To read more please see Smurfit Kappa Group's Sustainable Development Report.

\*\* Bag-in-Box sites' data is included in reporting and it contributes to progress against the Group's Better Planet 2050 targets.



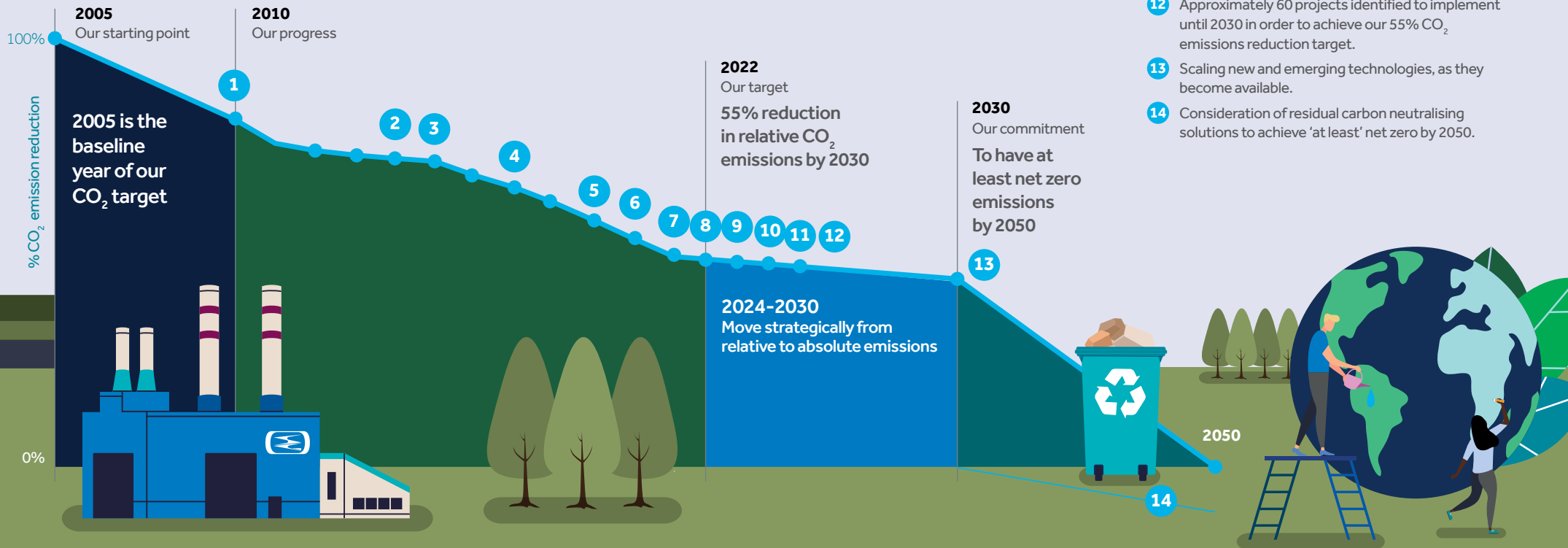
# Our journey to net zero

Smurfit Kappa Group's long-term ambition, third-party validated targets and continued action today have us well positioned to deliver on our commitments.



## Smurfit Kappa Group's Net Zero Transition Plan

- 1** Set target of 20% reduction in relative CO<sub>2</sub> emissions by 2020 (2005 baseline).
- 2** 2020 target of 20% reduction achieved with a 21% reduction by the end of 2013.
- 3** New relative emissions reduction target of 25% reduction set for 2020.
- 4** 2020 target of 25% reduction achieved and more ambitious relative emissions reduction target of 40% by 2030 set.
- 5** Approval of €134 million new recovery boiler in Nettingsdorf (Austria).
- 6** Long-term target of at least net zero emissions by 2050 and increased the 2030 emissions reduction target to 55%.
- 7** 2021: SBTi approval received for our CO<sub>2</sub> emissions target as being in line with the Paris Agreement and a well below 2°C trajectory. Launched Better Planet 2050 commitments.
- 8** 2022: 43.9% reduction in CO<sub>2</sub> emissions. Successfully trialled hydrogen project at our Saillat paper mill (France). Announced a major investment in our Cali paper mill (Colombia) of almost US\$100 million in a sustainable biomass boiler.
- 9** 2023: Significant investment in our Hoya paper mill and board manufacturing plant (Germany), where a CO<sub>2</sub> emissions reduction of 5,500 tonnes per annum is expected.
- 10** 2024: Contribution from a state-of-the-art sustainable biomass boiler at our paper mill in Cali, Colombia, which will reduce our global Scope 1 and Scope 2 CO<sub>2</sub> emissions by approximately 6%.
- 11** Reviews of our third party validation.
- 12** Approximately 60 projects identified to implement until 2030 in order to achieve our 55% CO<sub>2</sub> emissions reduction target.
- 13** Scaling new and emerging technologies, as they become available.
- 14** Consideration of residual carbon neutralising solutions to achieve 'at least' net zero by 2050.





# Innovating for our customers

One of the main sustainable advantages of Bag-in-Box® is that it helps to significantly extend the shelf life of liquid products before and after opening the pack. Our design ensures that no air enters the product when it is dispensed. Therefore, BIB significantly reduces food waste of products such as wine, milk or juices.

We deliver smarter sustainable solutions to our customers in the area of product waste: our SMARTLife service identifies and eliminates problems during the wine filling process, the SQUIZ® system reduces tremendously the amount of waste inside your XXL liner bag.

## SQUIZ®, a revolutionary discharge system developed and patented by our new plant Pusa Pack, Spain

Usually when 1,000L bags are discharged still quite a lot of product remains inside. Given that the bag is in a huge container, it is difficult for the operators to cope with it. To help them, several manual solutions such as hand rings and an air assist liner were adopted. However, these were not 100% efficient and, just as importantly, safe for the discharge operation, the operators had to manually drag heavy loads, which had the potential to lead to injuries. The fully automatic SQUIZ® system was invented and patented 4 years ago and consists of a machine and a liner bag of a specific geometry and dimensions. It is excellent in terms of production safety and very powerful in eliminating product waste. SQUIZ® has already been utilised by many cosmetic companies, who have reduced their residue from 40 kg to 1.5 – 2 kg per bag.



**99%**  
waste reduction thanks to SQUIZ® bag

**62**  
Customer webinars over 3 years

**1,800+**  
Oxygen measures in wineries over 3 years

**16**  
Audits conducted for 15 companies over 3 years

## SMARTLife: improving product's shelf-life, quality and sustainability of Bag-in-Box®

The end consumer wants to open their Bag-in-Box® and enjoy a glass of good wine. It may sound simple, but to achieve, an entire process must be mastered. Various studies have shown that the introduction of oxygen must be controlled throughout the winemaking process, but also during subsequent handling of the wine, tank transfers and pumping. This is particularly important when it comes to preserving the organoleptic properties of Bag-in-Box® wines.

Thanks to our extensive experience in the wine industry, our oenologists are in a position to give recommendations on the suitability of wines for Bag-in-Box® packaging, wine preparation, filtration, additives or other specific subjects. Although certain general principles apply, these conditions are tailored to each winery's particular situation and our aim is to provide customised recommendations.

We also offer our customers a variety of trainings to contribute to an extended shelf life of their product (not only wine, but juices, dairy, liquid eggs, water, etc) and improvement in the sustainability of their packaging.

*"We have a long-standing partnership with Smurfit Kappa. For over 40 years, they have supported us in a variety of projects. SMARTLife has enabled us to identify areas where we can optimise our packaging lines to reduce dissolved oxygen. The work carried out on these points will allow us to offer our customers better shelf-life for our Bag-in-Box® wines." Jean-Marc Parsat, CEO of Vins Jean Louis Parsat.*

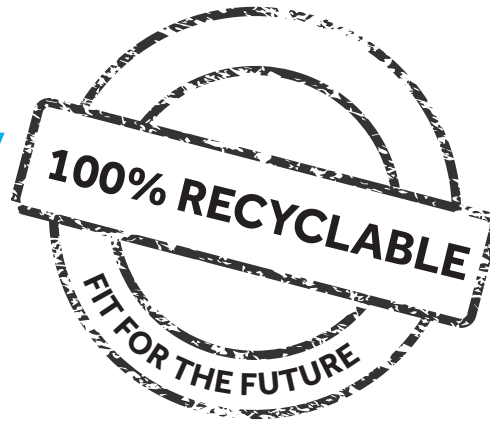






# Contributing to circular economy

Probably the most common question customers ask us is whether our bags and Pouch-Up® are recyclable. The answer is yes, most of our bags can be recycled, but not yet Pouch-Up®. Of course, we are working on that too.



## Delivering sustainable innovation with our Vitop® Uno tap

In 2022 we designed and patented the first Bag-in-Box® tap on the market with attached tamper protection. The new tap design is compliant with the forthcoming Single Use Plastics Directive as it does not require the consumer to remove the tamper protection. Instead, it is deactivated when the product is first used and remains an integral part of the tap without affecting the subsequent use of the Bag-in-Box® product. This innovative solution eliminates the possibility of the tamper protection plastic ending up in the environment which can happen with detachable tamper protections.

We built this tap, with the prospective option to transition to mono-material, to be suitable for recycling into the existing flexible polyethylene stream. This will strongly improve the recyclability of our bags, according to both Institute cyclos – HTP and RecyClass methodologies. During 2023, we are participating a number of industrial trials and joint projects with wine customers.



**1st**  
on the market with  
attached tamper  
evidence

from  
**75% to  
100%**  
recyclable



## Circular approach for our customers

Bag-in-Box® is made of two high performing lightweight materials – the corrugated box (75%) and a flexible bag (25%). The box and the bag are easy to separate by the consumer after use, facilitating the recycling of each material in its own recycling stream. Cardboard packaging has the highest actual recycling rate in Europe. In many European countries, recycling facilities exist for standard polyethylene and EVOH film bags (for wine, water, dairy and other products), with collection and sorting infrastructures are in place.

We have recyclability certificates for our bags from Institute cyclos – HTP with the rates up to 91% in Germany and Netherlands and with slightly lower ones in France, Spain, Portugal, Italy, Austria, Belgium, Denmark, Norway and Slovenia. We also have certificates from RecyClass with rates of 53-55% for Germany, Sweden, Finland, Norway, Belgium and France. The two organisations are using different methodologies, but both confirm that our bags conform to recycling standards and can be sent for reprocessing. The main reason for the RecyClass lower rate is a polypropylene tap.

Currently there is not a unified European approach to evaluating flexible packaging with common guidelines for design and recycling, and this complicates the reporting of sustainable development of the industry, however there is progress.

Our R&D is relentlessly focused on improving our bag recyclability. We are testing new barrier materials and film compositions to maintain the high performance of Bag-in-Box® and follow the recommendations of plastic packaging resource management authorities.

# Delivering for our people

It is the Group’s ambition to be recognised as a globally admired company, a great place to work and an employer of choice for top talent. These ambitions are not just about our business growth, but based on our understanding that our success is driven by our highly valued and motivated teams across the world.

## Inclusion, Diversity and Equality (‘ID&E’)

Smurfit Kappa Group’s ambition is to create an inclusive workplace where everyone has a real sense of belonging and can be their authentic selves at work every day.

### Insights to action

In 2022, we conducted a group-wide ID&E survey. The insights and feedback from the survey will inform the next phase of our EveryOne journey. For example, the survey results supported us in creating a three-year roadmap to advance our ID&E programme.

Our ID&E Discovery survey was conducted across the organisation and attracted:

**8,000**  
respondents

**9,000+**  
employee comments

Our EveryOne Discovery:

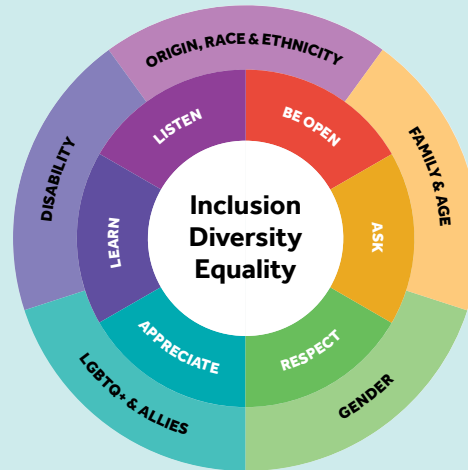
**74%**  
agree that we are an  
inclusive company

**78%**  
awareness of  
EveryOne programme

**7/10**  
colleagues know how  
to raise a concern

**70%+**  
have seen EveryOne  
communications

EveryOne focus areas:



**500**

people applied for the  
SK RISE development  
programme



## SK RISE – new female development programme

SK RISE is a development programme for female employees, designed to support their career and personal development aspirations.

The programme was launched on International Women’s Day in 2022, with almost 500 female employees applying.

*“The SK RISE programme enabled me to expand my female network across the Smurfit Kappa Group,” says Gillian Clohessy, Group Tax Manager.  
“The experience helped me overcome limiting beliefs, understand my personal impact, as well as giving me a renewed focus on my career goals.”*

As a result of the high engagement levels, in 2023 there will be an increase in the courses so we can engage with a larger number of females within the organisation due to the significant interest levels and positive feedback of participants. Female employees from Bag-in-Box participated in this programme as well.

# Supporting our communities

Smurfit Kappa Group are deeply committed to our local communities and have always believed strongly in collaborating with them. Through our operations, and the Smurfit Kappa Foundation, we actively support projects that help build a sustainable future for the communities in which we live and work.

## BIB Projects



### Donation to Casa Hogar Belén

Two years ago Smurfit Kappa Bag-in-Box Mexico started a tradition to support an orphanage house Casa Hogar Belén. In summer they donate US \$1000 for the swimming lessons organised for 17 orphanage children. And before Christmas employees of the plant come to them with gifts to spend time together in a family holiday atmosphere.

### Europ'Raid 2022

In summer 2022, SK BIB Epernay also sponsored the participation of one of our employees in the Europ'Raid 2022. Thibaut, a maintenance apprentice at that time, and his teammates completed a 10,000 km cultural and solidarity tour of Europe through 20 countries in 22 days! They transported 70 kg of school supplies and distributed them to underprivileged schools.

### Forum Climate Ambition

For the second year Smurfit Kappa Bag-in-Box Epernay participated in the Climate Ambition Forum. The theme of 2022 was water. We built a dedicated stand, participated in the expert sessions, organised educational workshops for children and explained the importance of water and its role in the design, sorting and recycling of packaging, as well as its reuse.



### Collaboration with Alzheimer's Association

The Smurfit Kappa Bag-in-Box Ibi in Spain partnered with the local Alzheimer's Association, AFAIB, to organise a workshop on dynamisation and interaction with the help of virtual reality (VR) technology. There were games, didactic workshops, VR cinematic experiences, music therapy and work therapy, with three Smurfit Kappa employees helping to facilitate and participate in the activities. The objective of the day was to promote the integration of Alzheimer's patients within their community.

€1,500  
EUR  
invested in the  
project





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