

VETROTIME

Innovation
The greener way
to enjoy beer

**Greenfield
Boffalora:**
Dawning of a
new era

**Carlsberg
1664 Blanc:**
More than just a beer

**Market study
confirms:**
User convenience is key

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The greener way to enjoy beer

Following Mohrenbräu Pfiff, Mohrenbräu Spezial – Vorarlberg's most popular beer, with a market share of over 30 percent – is now available in the 0.33-litre lightweight glass bottle from Vetropack. Although it weighs a mere 210 grams, the lightweight bottle is considerably more robust than normal glass. It saves up to 75 percent of CO₂ across the entire value and distribution chain – a milestone in sustainability.



Publication information

Editing and Text Corporate Communications
Vetropack Holding Ltd, Bülach
Design Arnold & Braun Grafik Design, Lucerne
Print Kalt Medien AG, Zug



myclimate.org/01-22-651544

Dear readers,

The overall economic situation continues to be shaped by the consequences of the war in Ukraine, and the pandemic is still not over. Unfortunately, latest investigations on the ground at our plant in Gostomel near Kyiv have shown that it will be impossible to resume production there for the foreseeable future. This leaves us without the capacity of three furnaces in the medium term – and, of course, this will impact the operating result in the 2022 financial year.

But under no circumstances will we abandon our site in Ukraine, which looks back on a long tradition. On the contrary: the facility will be retained until the damage is repaired and a new start is justified. A newly-formed team is regularly present on site to survey the situation and undertake the necessary maintenance and clearance work. We are also providing support for our employees in Ukraine through a foundation established specifically for this purpose; regrettably, however, a temporary reduction of the workforce was unavoidable.

The situation in Italy is quite different: the opening of the new plant at Boffalora sopra Ticino near Milan is an eagerly anticipated event. All of us – and, of course, the local workforce in particular – are looking forward to the commissioning of this cutting-edge Vetropack facility, which holds out such promising prospects for the future. Another positive development is the overdue increase in the European Central Bank's key interest rate, which should limit the negative impact of inflation on companies and private individuals.

Despite the difficult situation – and let us not forget the potential threat of an energy crisis this winter – we are therefore adhering firmly to our economic strategy and especially the ambitious environmental targets we have set for 2030. As a sustainable packaging material, glass is increasingly at an advantage over the alternatives – and this trend has been confirmed by market developments in recent years.

So there is every reason to be guardedly optimistic, even though overall political and economic conditions continue to be challenging. May I therefore wish you much courage and strength – and, of course, I hope you will enjoy reading this issue!



Johann Reiter
CEO, Vetropack Group





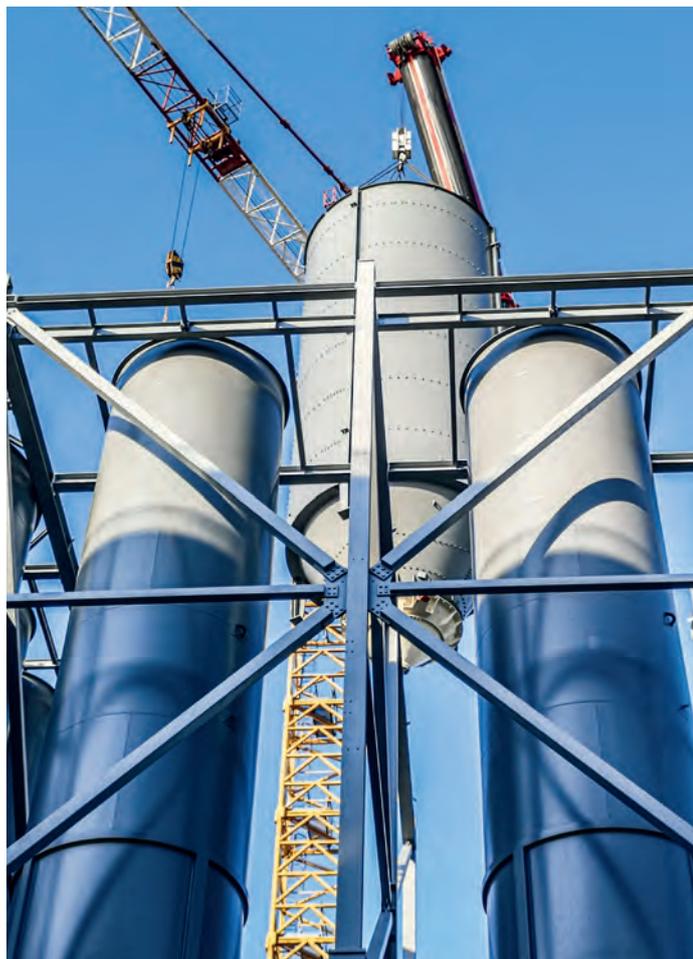
RINGING IN A NEW ERA

Vetropack is building a new production facility in Northern Italy

A new plant for a new era: Vetropack is investing in a new flagship facility for the long-established Italian market. This cutting-edge production plant is due to start operating in 2023 at Boffalora sopra Ticino near Milan, not far from the old site. The new facility is designed to ensure maximum future viability, flexibility and sustainability.

The canal paves the way to the future: the Naviglio Grande is a canal that flows into the river Ticino, which in turn forms the border between Lombardy and Piedmont. Starting in the 13th century, the canal was used to transport goods to and from the burgeoning industrial region around Milan – and it continued to perform this function well into the 20th century. The groundbreaking ceremony for the Vetropack Group's new plant took place on 25 October 2021. With nine glassworks and around 4,000 employees, Vetropack supplies high-quality glass packaging to markets in central, eastern and southern Europe. The Group's main focus is on the food and beverage industry, with packaging for products ranging from olive oil and preserves to nut nougat spreads and juices, soft drinks and spirits of all kinds. Wine and prosecco play a key part in the Italian market.

Vetropack Italia S.r.l. became a subsidiary of the Group in 2015, but the history of glass production at the Trezzano sul Naviglio site dates back to 1960. Johann Reiter, Vetropack's CEO, explains: "It already became clear at a very early stage that the old site in Trezzano sul Naviglio was not adequate to meet our company's objectives in the longer term. The important Italian market, with its rich culinary tradition and many world-famous brands, plays a key part in our strategy." Then there are the ambitious goals for quality and sustainability that the company aims to achieve by 2030: on the one hand, production is to become more flexible and individual while on the other, resources should be used as efficiently as possible.



Far more than a factory – a living piece of the future

Planning began well in advance for the new production facility, which entails investments in excess of CHF 400 million. All stakeholders – including the Italian authorities, landscape designers, architects, employees in Trezzano sul Naviglio and experts from the Vetropack Group – were brought on board at an early stage to develop an exceptionally future-proof and sustainable concept. Built on the site of the former Reno De Medici paper mill in compliance with all environmental requirements, the future manufacturing facility will occupy an area of 347,000 m² including about 170,000 m² for the production plant as such.

A historically important building is being restored and reopened to the public as an information centre. The SP225 trunk road is to be adapted as the building work proceeds; construction of parking areas for passenger cars and trucks will also relieve pressure on this route. Another feature of the site is a park



extending over 31,000 m²: a public green space that provides an attractive contrast to the modern industrial landscape. All trees felled in the course of the construction work will be replanted elsewhere. The glass façades blend into the landscape harmoniously – thanks not least to the understated earth tones chosen for the colour scheme. The roof of the facility has been designed so that photovoltaic systems can be used on its entire area: some of them will even start operating on day one.

All these features show that sustainability has high priority at Boffalora – not only in terms of urban development and landscaping, but also as regards technology and social aspects: all 301 employees at the old Trezzano sul Naviglio location have been offered transfers to the new site at Boffalora,

about 25 kilometres away. Although the volume produced per employee will be substantially higher, there will also be a slight increase in the size of the workforce thanks to the increased capacity – so training on the new production plants for both new and existing employees has already been in progress since 2020.



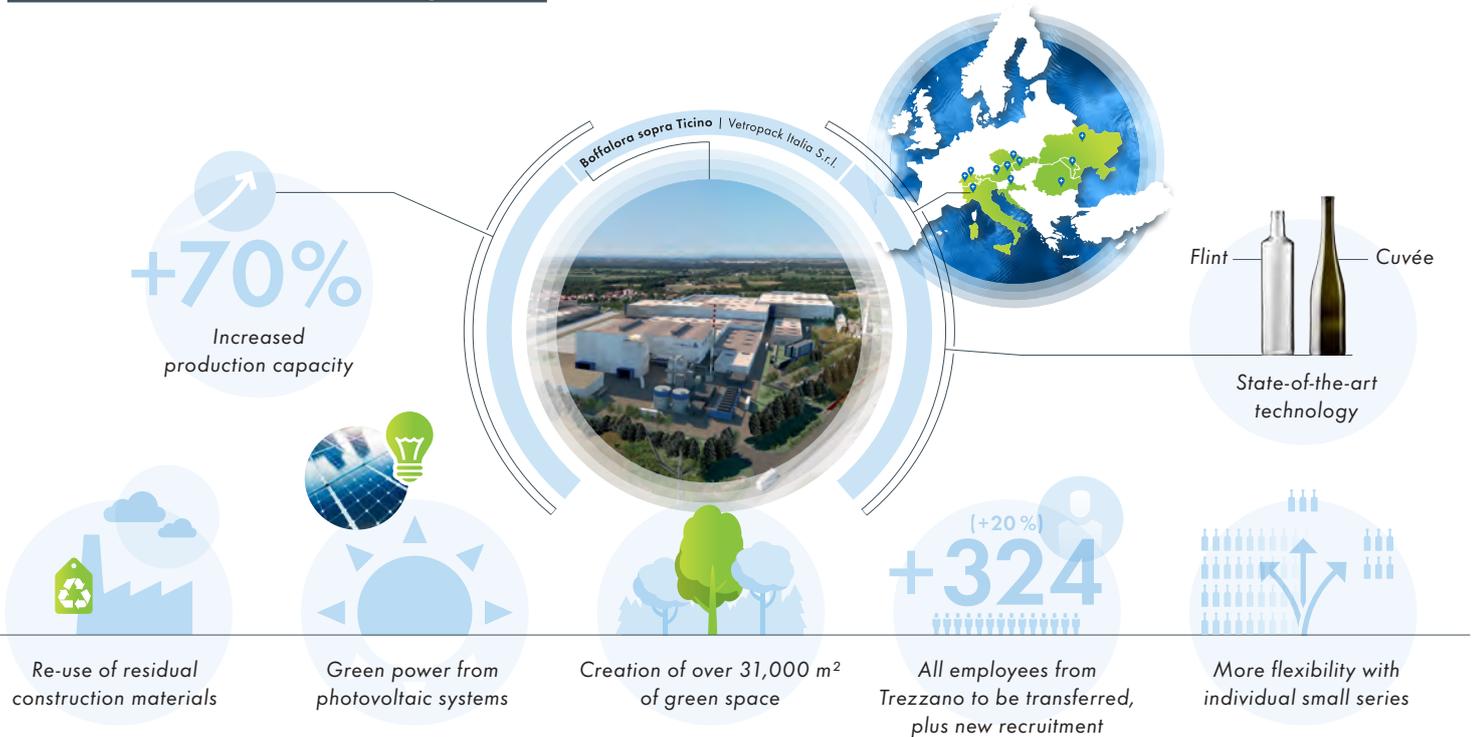
More with less – Industry 4.0

How will glass be produced in the new plant? Vetropack is leveraging the benefits of a smart factory while retaining the essential factors of human know-how and creativity: all the glass production processes are based on the Vetropack Group's expertise, with cutting-edge technology incorporated throughout. Vetropack's "safety first" philosophy has been implemented consistently, and workplace design incorporates the latest findings from ergonomic research. Both white and cuvée shades will be produced on site, and productivity per tonne of glass will increase substantially thanks to state-of-the-art manufacturing equipment. As in the old glassworks, two furnaces will be commissioned and operated at Boffalora in the initial phase. However, the entire infrastructure is already designed for an expansion of production capacity, given that the market is expected to develop positively both in Italy and beyond its

borders. Even with two furnaces, production capacity will already be increased by about 70 percent.

"This will also make Boffalora one of the largest facilities within the Vetropack Group," according to Christoph Burgermeister, Project Manager at Vetropack. "With modern plant and processes, we'll be able to produce more flexibly in the new glassworks. That will put us in a better position to meet rising demand for high-calibre packaging – including orders for smaller quantities or semi-specialities, as we call them." One outstanding feature is the fully automated warehouse: autonomous vehicles transport finished bottles and glass containers safely from the production line into the warehouse, and then onto the loading ramp – with no human intervention!

The Boffalora site at a glance





Vetropack is a sustainability pioneer

As a top priority, Vetropack has also invested massively to ensure that the new plant will be environment-friendly and resource-efficient. Glass is one of the most sustainable of all packaging materials because it is 100% recyclable – and it can be recycled an infinite number of times. As one of the pioneers of recycling, Vetropack began collecting used glass in Switzerland back in 1970. Nowadays, the proportion of reused glass in the Vetropack Group is about 55%, and the aim is to surpass 70% by 2030.

Measures to enhance sustainability:

- Remediation of the contaminated industrial site
- Re-use of material from the demolition of the original buildings and installations
- Low noise emissions by day and at night
- Energy-efficient processes and production equipment, and utilisation of waste heat
- Production of green electricity from photovoltaic systems
- Reduced emissions thanks to latest filtration systems (dust and NOX)
- Low water consumption ensured by using closed-loop systems

Employee spotlight

My name is Alessandro Mantovan, and I work as a cold-end engineer at Vetropack Italia. I joined Vetropack back in February 2020 – and I'm still just as fascinated by glass as I was on the day I started work at Trezzano.

After gaining my MSc in Materials Engineering at the Polytechnic University of Milan, I worked in the automotive industry and also in the food and beverage sector – always in production. As compared to other sectors, my feeling is that the container glass industry in general – and Vetropack in particular – involves complex industrial production methods that present unique difficulties, with a high level of responsibility.

I'd say that it's mind-boggling to realise how everyday kitchen items are actually manufactured: with furnaces, IS machines, and control machines. When I think of the glass containers and bottles we manufacture, or the processes

that we're responsible for, I feel that we're playing our part in making the world more sustainable – while paying full attention to quality as well.

I'm looking forward to starting work in our new home: our new plant in Boffalora!



MORE THAN JUST A BEER

Why 1664 Blanc is so successful – and what role its famous blue bottle plays

Carlsberg launched its 1664 Blanc beer as an international brand in 2016 – and ever since then, it has never stopped growing. There's no doubt that one factor in this success story is the distinctive blue bottle – supplied by Vetropack.



Carlsberg numbers among the world's largest brewing groups. Founded in 1847 with its headquarters in Copenhagen, this Danish company has always set its sights beyond the borders of its home country. Its first foreign sales were made to Edinburgh (Scotland) as long ago as 1868, and the British Commonwealth was also a major market for Carlsberg throughout the 20th century. When Carlsberg merged with its main Danish competitor Tuborg in 1970, it became even clearer that this success story would not only go on – but go big!

Today, Carlsberg has brands and breweries almost everywhere in the world. Carlsberg continues to be a global trailblazer with a workforce of over 40,000, production volume of 142 million hectolitres (2021), and revenue in excess of DKK 60 billion (2021; equivalent to about EUR 8 billion). Popular international

brands include Somersby, Tuborg, Grimbergen, 1664 Blanc and – of course – Carlsberg itself. The Group also owns many local brands including Kronenbourg in France and Feldschlösschen in Switzerland, as well as Holsten, Wernesgrüner and Lübzer in Germany. Carlsberg's portfolio comprises a total of over 500 regional beers, and the Group is present in many Asian and other overseas markets.

Global beer trends and glass packaging

The last two decades have seen a shift in global beer consumption: a diverse spectrum of tastes has emerged to challenge traditional recipes, with a clear trend towards non-alcoholic, mixed and speciality beers. As part of its response to these changes, Carlsberg launched 1664 Blanc, a premium wheat beer originating from France that conveys French lifestyle and

savoir-vivre as an international brand in the premium segment. 1664 Blanc is a light and refreshing wheat beer, with a layered taste profile that has already made its appearance in over 40 markets across the globe.

Nikola Maravić has been Global Marketing Director for 1664 Blanc for the last three years, after joining Carlsberg ten years ago. He reports: "A new, fully alcohol-free variant of 1664 Blanc was launched in France this year, and will soon be available in key markets across Europe and Asia. But all the different variants are mainly there to strengthen the core proposition of 1664 Blanc – which, by the way, is probably the only beer brand in the world to have a year of origin as its name."

"Vetropack is always ready to support us with driving innovations and customer-oriented initiatives ahead."

Nikola Maravić

One of the key attributes that make 1664 Blanc stand out on the shelf is the blue bottle. "With its special shape inspired by the Eiffel Tower and its unique blue colour, the bottle perfectly embodies the premium identity of 1664," Maravić emphasises. "Blue is a colour that stands for trust, loyalty and stability – but also for depth, wisdom and sincerity. It's one of our ingredients for a successful brand – ideally complementing the recipe and the French lifestyle of elegance and joie-de-vivre."

Partnering to deliver sustainable added value

"Vetropack is always ready to support us with driving innovations and customer-oriented initiatives ahead," Maravić notes.

"Their work is highly reliable and professional, and they also support us on our sustainability journey – by continuously reducing the carbon footprint of our bottles."

As a vital part of its business strategy, Carlsberg is driving sustainability ahead in its operations – its 'Together Towards ZERO' programme targets four clear goals: zero carbon footprint, zero water waste, zero irresponsible drinking, and zero accidents. For its part, Vetropack is naturally pursuing



similar strategies – so both companies can work closely together and adopt a joint approach that will leverage potential to promote sustainability. Examples of this collaboration include interlinked business processes and supply chain management, more lightweight packaging, and also new materials and technologies.



Nikola Maravić
Global Marketing Director
for 1664 Blanc

ACTUAL PROJECTS

Striding ahead towards 2030

Vetropack launched a wide-ranging transformation process back in 2019. Based on five strategic initiatives, it aims to achieve two goals: on the one hand, we will tap additional growth potential in our existing business; and on the other, we will develop new business models so as to position Vetropack as a strong market player in the long term and play a key part in shaping the future of the glass industry.

Value Growth in St-Prex (CH)

A study shows consumer attitudes to beverage packaging

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Clearly Sustainable in Kremsmünster (AT)
Harnessing the sun's power for ourselves

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Expand the Core in Boffalora (IT)

Vetropack is building a new production facility

4



Since then, we have defined specific projects for all five strategic initiatives. To mention just a few examples: we have acquired a glassworks in the Republic of Moldova to strengthen our business in Central and Eastern Europe (“Expand the Core”); we have reorganised the Technology and Production area as a central innovation driver, including the Innovation Centre at the Pöchlarn site in Austria (“Drive Innovation”); and we have centralised and digitalised a series of business processes such as purchasing and production planning (“Leader in Quality”). You can read about some more projects we are working on in this magazine.

Of course, Vetropack has not been left unscathed by the coronavirus pandemic that swept through the world in the last two years, so we have had to accept delays in some areas. On top of this, there is the Russian war of aggression against Ukraine – which is not only impacting our employees on the ground there, but is also affecting the Vetropack Group as a whole.

Nevertheless, our new strategy has stood the test of these crisis years. Once again, our business model is proving to be robust and resilient. At the same time, our mature corporate culture



gives Vetropack the agility we need to respond flexibly and prudently to unexpected challenges.

Not everything is controlled from headquarters

There is certainly no need for headquarters to be the only source of impetus for changes: in the process of setting up our new Italian site, we took a very deliberate decision to locate the Vetropack Group's Sustainability Officer in Boffalora sopra Ticino.

Strategic initiatives



Expand the Core

As the foundation for its strategy, Vetropack is continuing to consolidate its dominant positions in its home markets by moving closer to its customers and evolving into a high-calibre partner and full-service provider. Vetropack is also aiming for expansion in selected markets.

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Expand the Core in Chişinău (MD)

On course for successful integration - new Vetropack site



Value Growth

Vetropack is broadening its areas of activity by entering new business sectors throughout the glass packaging value chain. The focus is on new services that logically expand its existing expertise, enabling the company to continue strengthening its customer relationships.

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Drive Innovation in Nemšová (SK)

Conversion of the recycling line



Drive Innovation

Vetropack intends to become a trendsetter in the glass packaging industry, so it is proactively driving innovation ahead. This applies to gradual innovations on the one hand - while on the other, the focus is on product and market innovation, together with entirely new business models.

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Drive Innovation in Pöchlarn (AT)

Lightweight glass bottle reduces CO2 emissions



Clearly Sustainable

Vetropack is pursuing a holistic approach to sustainability underpinned by two cornerstones: continuously reducing the environmental footprint, and improving recycling in the value chain (non-returnable and returnable), while safeguarding access to key resources (mainly cullet).



Leader in Quality

Vetropack gears everything it does towards providing optimal support for the strategy at Group level. This includes a holistic "Operational Excellence" approach as well as coordinated structures and processes in sales, marketing, technology and production. As additional goals, we aim to make better use of the opportunities offered by digitalisation throughout the Group, and position Vetropack as an Employer of Choice.

Since April 2022, Nicolas Lootens has played a key part in steering the development of our "Clearly Sustainable" strategic pillar: especially in such an energy-intensive sector as the glass industry, ecology is a crucial factor.

As a pioneer, we intend to play a decisive role in shaping the transformation of the glass industry; in parallel, we are working to continuously reduce the ecological footprint of all our business activities and improve recycling in the value chain.

AN ISSUE THAT CONCERNS US ALL

Sustainability is on everyone's lips these days – but what does it actually mean for Vetropack as a company?

Nicolas Lootens has been Vetropack's Group Sustainability Officer since April 2022. He can draw on many years of professional experience in Health, Safety, Environment and Sustainability Management, gained with various global corporations. Environmental awareness is also a top priority in his private life.



Our 2030 strategy sets ambitious sustainability goals

At global level, sustainability throughout the Vetropack Group is driven by the targets defined in our 2030 strategy.

As the key goals, we will:

- reduce our carbon footprint by a further 30% (as compared to 2019)
- increase the percentage of cullet (recycled glass) in production to 70% (currently 54%)
- use 100% green energy by 2025
- implement climate-neutral logistics – from suppliers to Vetropack, and then to customers

“These are ambitious goals; we have already defined concrete action plans and are implementing effective measures to achieve them. But we want to accelerate the process even more, so we are currently reviewing our action plans. However, let’s not forget that sustainability isn’t only about ecology: it also has economic and social dimensions.”

Embedded sustainability in three dimensions

Economic sustainability mainly involves continuity and transparency in business and operations, good relationships with all stakeholders – and, of course, research and development to foster innovation. The social dimension of sustainability is closely aligned with the United Nations Sustainable Development Goals: these cover issues such as health and safety, gender equality, diversity and inclusion – in other words, just about everything that makes a company such as Vetropack a good employer!

“It’s important to point out that we’re not starting from scratch with our sustainability activities at Vetropack. For instance, we’ve already reduced our greenhouse gas emissions by 74%

since the 1990s,” Lootens notes. “What’s more, we have huge potential when it comes to renewable energies because of the large areas available to us. And it goes without saying that technological innovation is another key factor.”

Quantifying the reduction of our carbon footprint

Vetropack recently joined the ‘Supplier Leadership on Climate Transition’ initiative. This program brings together many leading brands in the global food and beverage industry with the aim of continuing to reduce emissions.

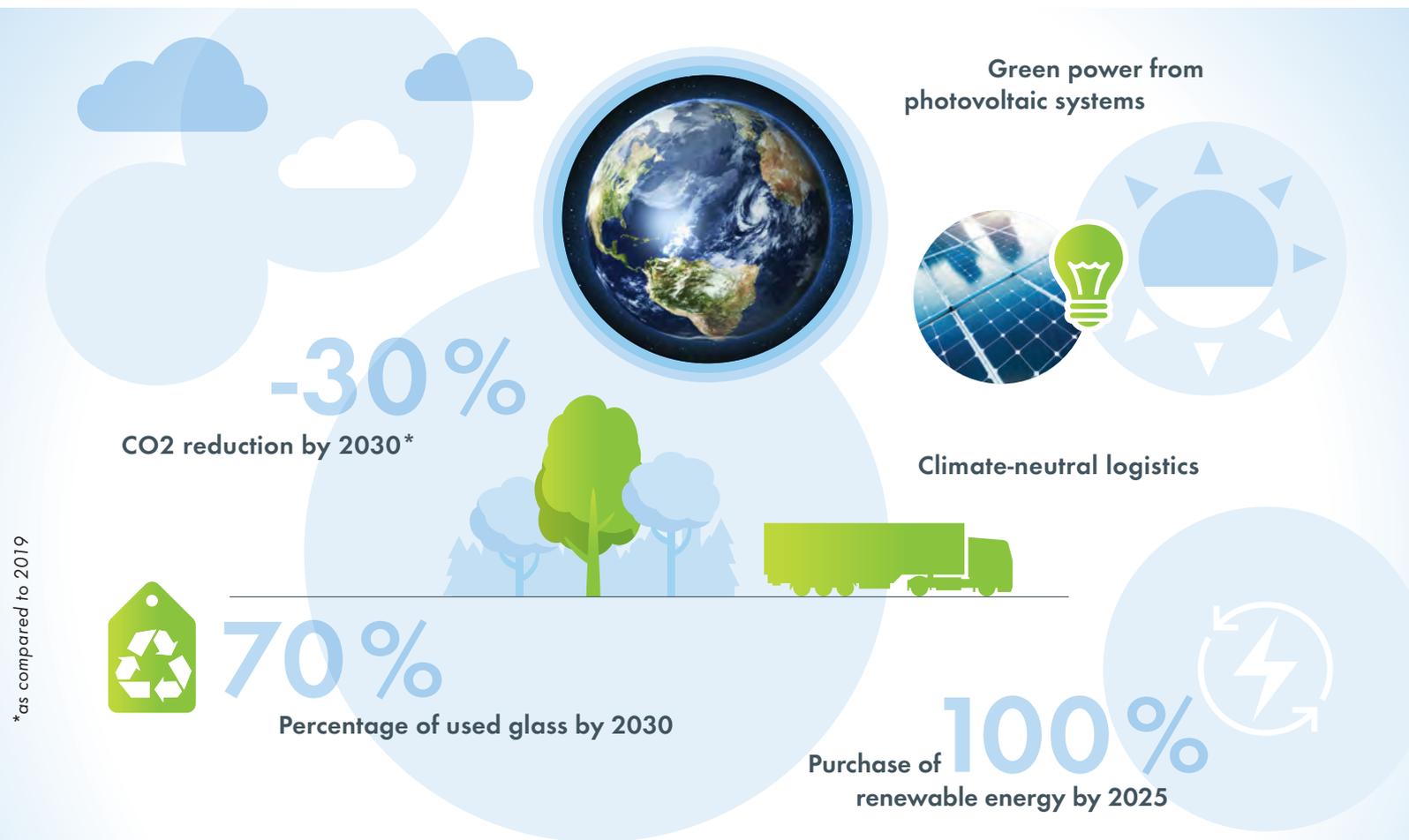
“Sustainability always starts with small steps. Everyone can contribute to more sustainability in everyday life – both at work and elsewhere.”

Nicolas Lootens

Members are required to measure and report their emissions precisely, and they are also expected to educate their suppliers on ways of reducing emissions throughout the value chain. To measure Vetropack’s progress in achieving sustainability, one indicator is especially important: the CO2 emissions per tonne of glass produced. At present, this number is 0.436 tonnes



of CO2 per tonne of glass; by 2030, it should be down to 0.3 tonnes of CO2. Final words from Lootens: “Looking even further ahead, we’re talking about carbon neutrality by 2050. But that would require us to replace the energy source for the glass melting process with hydrogen or electricity, instead of natural gas. It’s possible in theory – but in practice, we still have a long way to go.”



*as compared to 2019



VETROPACK CHIŞINĂU

On course for successful integration – new Vetropack site

The Moldova-based Glass Container Company S.A. and Glass Container Prim S.A. were acquired by Vetropack Holding Ltd back in late 2020. They have since been merged and renamed as part of their integration into the corporate group; as from March 2022, they have been operating as Vetropack Chişinău.

In Chişinău, the capital of the Republic of Moldova, Vetropack Chişinău has around 500 employees who produce more than 112,000 tonnes of glass packaging for the food and beverage industry each year. In 2019, Vetropack Chişinău – at that time comprising the two companies trading under different names prior to the merger – posted turnover of approximately EUR 40 million and produced 100,000 tonnes of glass packaging. Vetropack has been actively present in the region for decades and by integrating the new facility, it is continuing to consolidate its own market position in Central and Eastern Europe.

Closer to customers with full-service

“It is part of our integration strategy to incorporate acquisitions into the Group while preserving their local character and identity,” Vetropack’s CEO Johann Reiter explains. “By acquiring and integrating the company now known as Vetropack Chişinău, we are consistently pursuing our Group’s strategy of moving closer to our customers as a full-service provider and achieving further growth in our markets.”

The company now trading as Vetropack Chişinău was founded in 1995 in the Republic of Moldova, in response to growing demand from regional wine producers who felt the need for an additional, locally based manufacturer of quality glass containers. The Republic of Moldova’s wine industry has been able to boost its exports to Europe significantly in recent years. By 2021, two furnaces with a total of six production lines

were commissioned at the Chişinău site, thus increasing production capacity by 12,000 tonnes of glass in 2021.

Vetropack Chişinău manufactures an extensive portfolio of glass packaging products for the food and beverage industry. These include glass bottles of various shapes that perform many different functions, as well as wide-neck jars. They are sold not only to the growing domestic market but also to over 20 export markets. About 60 percent of local production is exported to regional markets, with the vast majority going to Romania.



Severe damage at the Ukrainian production site

The Vetropack Group's Ukrainian production site in Gostomel near Kyiv has been severely damaged by military action. Prompt resumption of production is not possible.

For safety reasons, the Vetropack Group began shutting down the Ukrainian plant at an early stage and was thus able to prevent any casualties among our colleagues. In view of these events, all employees have been temporarily released from work on full pay.

In the meantime, the site has been secured and an initial inspection has been carried out, but a detailed assessment of the war damage is still pending.

The production facilities have been severely damaged, and the overall situation in the region is still impacted by military action; from today's perspective, therefore, it will not even be

possible to resume operations in the longer term. These reasons have forced the Vetropack Group to shed two-thirds of the approximately 600 jobs at the site.

The Vetropack Group remains convinced of the site's potential and has no plans to close it permanently. A core team headed by the General Manager is currently continuing to investigate the situation on site; they are taking the first steps to prepare for the eventual repair and refurbishment of the production facility. One especially important part of their work involves securing the glass packaging and raw materials stored on site.

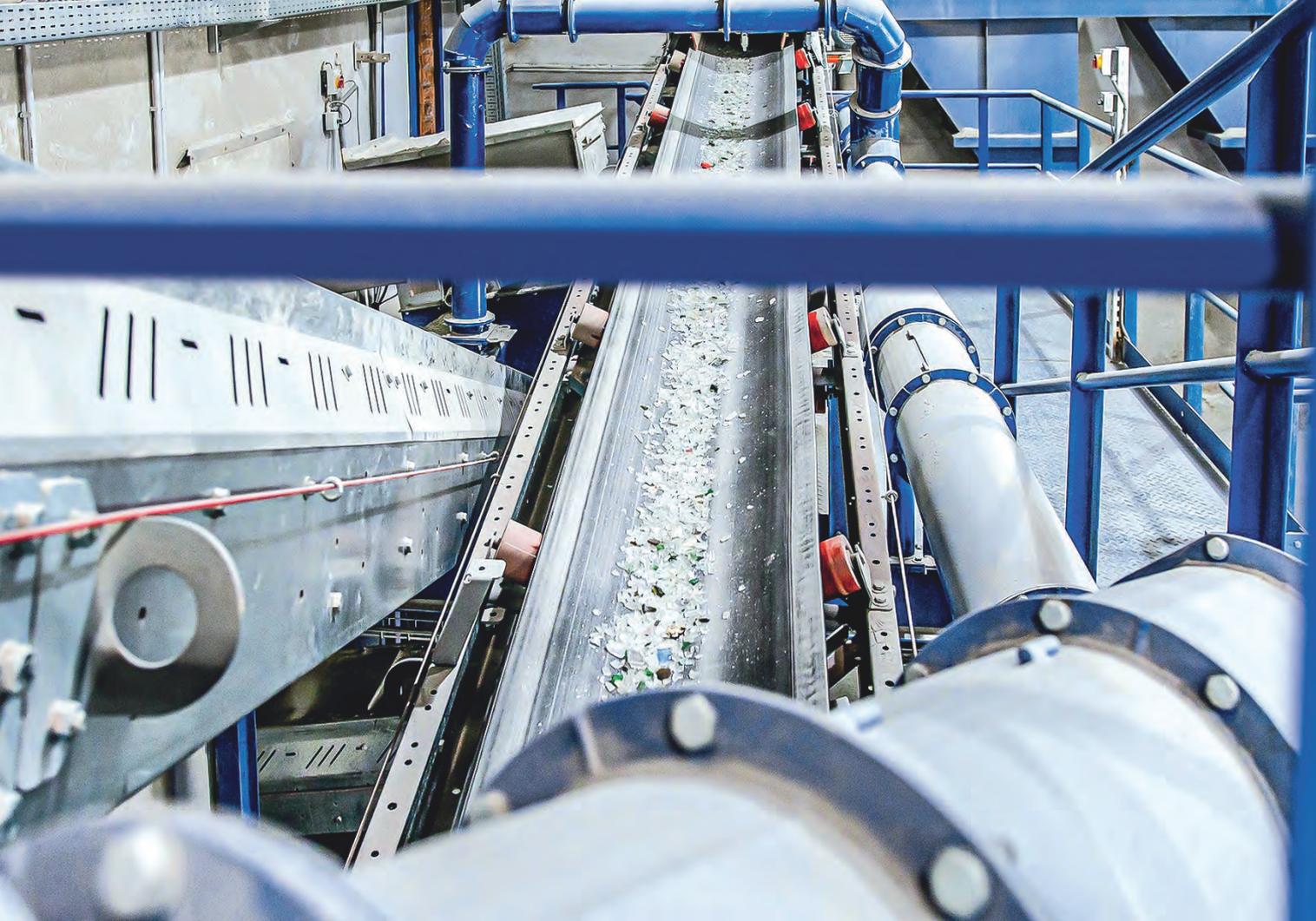
'bike to work' for Ukraine



bike to work is a pan-Swiss campaign aimed at promoting health in companies. Each year, over 70,000 commuters pedal to work and back home during May and June. bike to work helps around 2,400 companies to boost their employees' team spirit and fitness, while showing their commitment to sustainable mobility practice. Employees at Vetropack Holding Ltd in Bülach weren't only pedalling for their own health, to reduce CO2 and secure a good ranking for their team: they were also showing their support for their colleagues in Ukraine. Vetropack announced that it was prepared to donate CHF 1 for every kilometre covered – so in 621 days, 28 employees chalked up over 9,600 km – or CHF 10,000!

Vetropack Foundation Gostomel: Vetropack has set up a foundation that aims to provide support for colleagues in Ukraine. Everyone can donate to the Foundation as a direct way of supporting employees affected by the crisis in Ukraine. Use this QR code to read more about the Foundation on our website:





VETROPACK NEMŠOVÁ

Reconstruction of the recycling line in Nemšová

The glass industry is under growing pressure to increase its utilisation of used glass. This is prompting many glassworks to continue modernising their production technology.

In Slovakia, however, the situation is difficult because glass containers for sorting by colour have been abolished. Furnace Manager Ján Kebísek explains: "Mixed brown, green and white cullet isn't suitable for melting white glass, and the line that has been operating since 2008 was unable to separate out enough white glass from the mix. That's why we decided to convert the line for recycling cullet, so we could boost capacity and maximise the yield of used white glass."

Converting the line saves over 4,000 tonnes of raw material

The line's capacity is now 50 percent higher, so around 140,000 tonnes of cullet can be processed each year. Ján Kebísek expects the glassworks to save about 4,100 tonnes of original raw material – and what's more, CO₂ emissions will be slashed by 550 tonnes. For ten percent more cullet in the volume of glass, energy savings are about three percent and

carbon dioxide is reduced by seven percent. Thanks to this investment, the Nemšová glassworks is helping to reduce environmental pollution. At the same time, it is the only processor that is meeting the Slovak Republic's current and future requirements for the recycling of used glass.

To achieve the highest yield for white cullet, the plant has installed a dryer with an upstream unit for removing paper labels. Cullet that has undergone this treatment then reaches the optical separators that remove unwanted materials such as porcelain, ceramics, glass-ceramics and other components. However, usable glass is also separated out in this process, so the waste passes through the newly-built optical sorter, which returns usable glass to the sorting flow. Yet another sorting unit has been installed to clean the white glass and separate out any remaining glass-ceramic and leaded glass. An additional belt conveyor has been added at the very end of the line –

so now, the flows of both colours (white and mixed used glass) can be fed into the storage silos simultaneously.

Glass is the only material that can be recycled infinitely with no loss of quality. Time after time, it can be transformed into safe food and beverage packaging – which, ideally, should consist of 98 percent recycled glass. This makes it very important to ensure that cullet processing meets high quality standards.

Double anniversary

Vetropack Nemšová s.r.o., the only manufacturer of glass packaging for food and beverages in Slovakia, is marking two important anniversaries in autumn 2022. Vetropack Nemšová is celebrating 120 years since the glassworks was founded, and 20 years since it joined the international Vetropack Group.

120 VETROPACK
NEMŠOVÁ
1902 · 2002 · 2022

VETROPACK KREMSMÜNSTER

Clearly sustainable: harnessing the sun's power for ourselves

A large-scale photovoltaic system is currently under construction at Vetropack's Kremsmünster plant. Thanks to this multi-stage project, we will be able to make effective use of our roof areas and the sun's power.

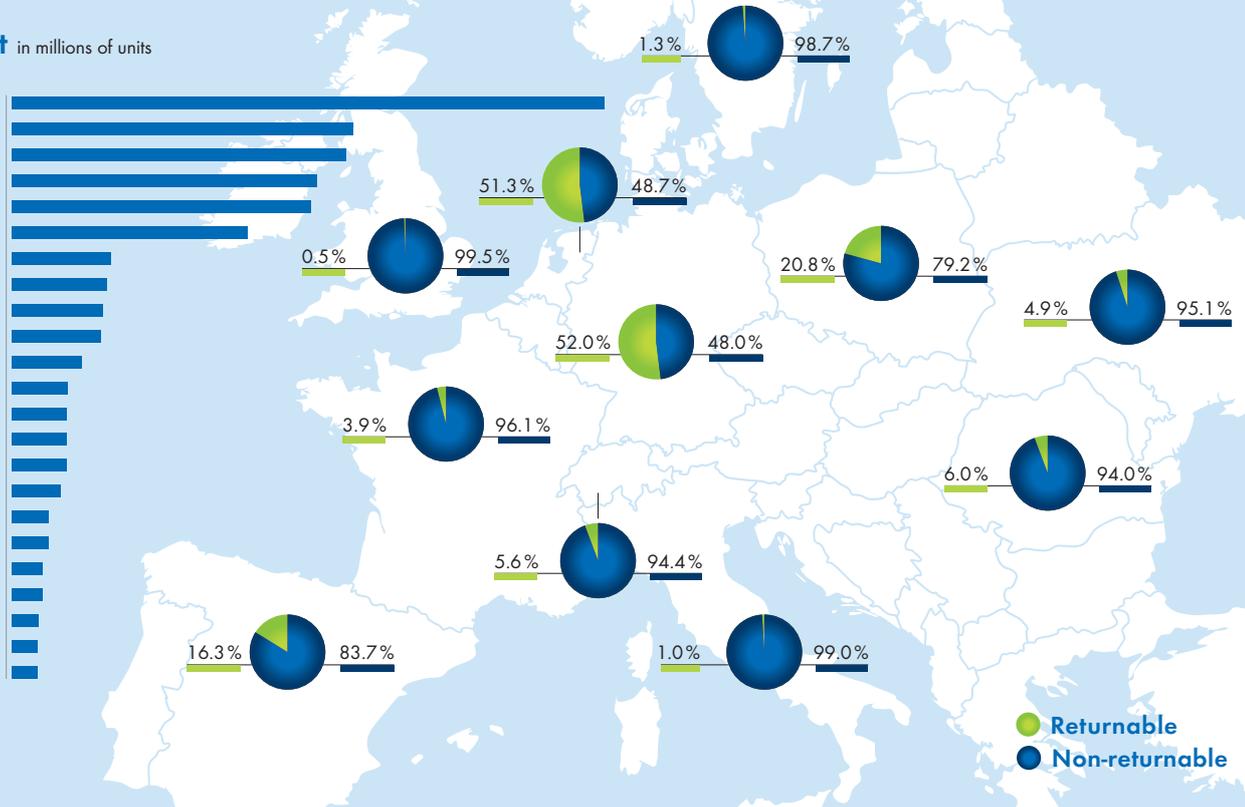


Using roof areas effectively, producing solar power and saving CO₂ at the same time: in collaboration with VERBUND (Austria's leading energy company), photovoltaic systems are being installed on the roofs of Vetropack's plant in Kremsmünster, Austria. The green light has already been

given for the first phase of this multi-stage project. After completion of this work in August 2022, the plant will produce solar power equivalent to the annual consumption of about 400 households. The power is to be used directly in the Kremsmünster plant to make glass production more sustainable.

Total market in millions of units

Germany	47,789
Spain	27,546
UK	26,921
France	24,602
Italy	24,131
Poland	19,026
Netherlands	7,988
Ukraine	7,689
Romania	7,324
Belgium	7,144
Czech Republic	5,596
Hungary	4,490
Switzerland	4,435
Portugal	4,420
Austria	4,417
Sweden	3,965
Greece	2,987
Bulgaria	2,924
Slovakia	2,445
Denmark	2,442
Finland	2,165
Norway	2,091
Ireland	2,087



CLOSING THE CONVENIENCE GAP

A survey in Switzerland has revealed what consumers feel about beverage packaging – and Vetropack is already responding to the results

How do consumers prefer to purchase their drinks? Which factors influence their everyday decisions? And how do they view the various types of packaging? An in-depth study has shown that end consumers rate convenience very highly – and this presents a challenge for Vetropack. Our response: improved technology to make glass light and robust.

When it comes to beverage consumption, every market is different. Shares of glass or PET bottles and also cans may vary greatly due to a number of factors: consumer habits, deposit regulations, availability in shops and – not least – the presence (or absence) of a returnable bottle system. These are just some of the parameters that must be considered when assessing chances of gaining market share. One way to achieve this goal is by introducing a new packaging method that not only optimises processes in the value chain, but also boosts sustainability. Some degree of general knowledge about consumer preferences and trends is already available, but a detailed survey is the only way to obtain factual insights geared to a specific market.

This prompted Vetropack to commission just such a study in Switzerland. The goal: to gain a better understanding of people’s attitudes and behaviours regarding beverage consumption (beer and soft drinks), focusing on the influence of packaging and (returnable) glass bottles in particular. As the first step, the survey aimed to differentiate the user groups. Many factors are at play here, including age, environmental awareness, income level and place of residence. However, one differentiating factor emerges as the most important of all: as in almost every country on earth, there is a significant divide in Switzerland between people with a (more) urban lifestyle on the one hand, and those with a (more) rural way of life on the other. The study labels these opposing Swiss consumer groups as “Urbanistas” and “Traditionalists”.

Why – and how – consumer habits are influenced by where people live

Typical Traditionalists spend more time at home; they have more storage space, and they use cars more regularly – especially when they go shopping. Urbanistas tend to have a more spontaneous lifestyle and they usually buy in smaller quantities,

partly because their carrying and storage capacities are limited. So how do these aspects influence consumers' perceptions of beverage packaging and their related behaviour patterns?

We can make one general statement: people clearly perceive glass bottles as the beverage packaging with the highest quality. Drinks from glass bottles taste fresher, they stay cold for longer, and glass has no negative influence on taste – unlike PET bottles and cans. Glass is also seen as more hygienic, more sustainable, and more “premium”: this last attribute is especially important for consumption in social settings such as events, parties and other gatherings. However, both Traditionalists and Urbanistas also mention some disadvantages: they perceive glass as less convenient due to its weight and risk of breakage, and because glass bottles are non-resealable.

The detailed analysis of results from the survey shows that Urbanistas attach greater importance to convenience. Traditionalists, on the other hand, are more open to glass because they are less concerned about transport and storage. The survey also revealed that older generations in Switzerland still remember returnable bottles as a sensible system, especially in terms of sustainability – even though large-scale use of such systems was abandoned back in the 1970s. Surprisingly, respondents were not able to identify a general environmental advantage for glass: packaging of all types is usually sent for recycling, so it was not obvious to participants that (returnable) glass is more eco-friendly than PET or cans. They only reached this conclusion after giving some thought to the question. This shows that sustainability is seen as less relevant than might have been expected, given that it is such a prominent issue in the media and society in general.

Closing the convenience gap: making glass light and robust

As an industry innovator, Vetropack has recently developed a new type of glass that is not only light but also robust. We have already completed a successful pilot in Austria (read more about this in the Mohrenbrauerei Success Story), and the aim now is to close the “convenience gap” between returnable glass and the other types of beverage packaging (PET, cans, and single-use bottles) that dominate the Swiss market.

The study has clearly shown that glass packaging harbours significant potential – especially in the beer segment, where glass is the most established packaging format. Traditionalists, who are generally open to glass and returnable bottles, would appreciate reduced weight and enhanced robustness. Urbanistas, too, would probably be more willing to buy

drinks in glass bottles if combinations of smaller quantities were offered, such as six-packs instead of large crates.

Needless to say, one key success factor is the possibility of returning used bottles almost anywhere. This is why retailers are such an important link in the distribution chain: for example, they could start out by offering speciality beers in the new improved glass bottles as the basis for re-establishing a returnable bottle system.

Then they could gradually expand the system to include other beers and soft drinks, thus leveraging sustainability by offering their customers a more eco-friendly way to enjoy their favourite beverages. Lower weight and higher stability

“This study has endorsed the improved performance attributes of Vetropack’s glass technology as a step forward in returnable systems.”

Evan Williams

are also factors that deliver benefits for beverage bottlers. Lighter bottles reduce labour effort and energy consumption, and their robustness helps to lessen breakage rates throughout the lifecycle.

Closing words from Evan Williams, Chief Commercial Officer at Vetropack: “This study has endorsed the improved performance attributes of Vetropack’s glass technology as a step forward in returnable systems. In Switzerland, we already have returnable glass in the HORECA segment, and a number of retailers have also introduced it. Further effort will be needed to involve and educate the various stakeholders so we can transform consumer habits and overcome the specific entry barriers at the point of purchase. The sustainability advantages are multiple and obvious – however, sustainability is more of an emotional argument for a brand or product; it has to be backed up by tangible convenience benefits, especially in urban areas.”

THE GREENER WAY TO ENJOY BEER

By introducing Vetropack's lightweight glass bottles for another beer in its range, the Mohrenbrauerei brewery in Vorarlberg (Austria) is cutting its CO2 emissions

Our robust, lightweight returnable bottle is creating a sensation in this corner of Austria: following Mohrenbräu Pfiff, Mohrenbräu Spezial is now the second beer available from this brewery in the practical and exceptionally sustainable 0.33-litre lightweight glass bottle from Vetropack. It reduces the carbon footprint by as much as 25 percent.



Enjoying a wide variety of innovative beers is very much part of life in the Austrian state of Vorarlberg. The beers here are somewhat stronger than in the nearby Allgäu region, for example, and there is a wide range of seasonal and creative beers that offer special taste experiences. The Mohrenbrauerei – a brewery founded by Johann Mohr at Dornbirn in 1763 – is to thank for this. The brewery passed into the ownership of the Huber family in the 19th century, and it still has close ties with the people and the region. A market share of 53 percent sends out a clear message, and many exiles from Vorarlberg remain loyal to their favourite beer long after they have left the region.

Awareness of tradition combined with innovation

Andreas Linder, Mohrenbrauerei's Head of Marketing, reports: "We view ourselves as a brewery that is innovative and sustainable. Of course, we also do our job with professionalism and passion, and we take a holistic approach to the subject of beer. That includes the dialogue we maintain with customers and the

catering trade, our diverse range of products, and also aspects such as service and product expertise, regular maintenance and modernisation of the production plant and dispensing equipment – the list could go on." Visitors to Mohrenbrauerei can discover a world packed with experiences, attend a seminar on brewing or train as a beer sommelier, and sample international beers of all styles that are almost impossible to find elsewhere. The last two years have seen the brewery adding a lager and a wheat



beer to its range, which also includes trending varieties such as Pale Ale and Radler Grapefruit as well as a series of local specialities. Alongside these types, Mohrenbrauerei offers about six creative beers each season: these are brewed on a small scale (around 200 to 600 bottles), so they are highly sought-after collectors' items. To name one example: for the 2022 summer season, a new Mojito beer was created that opens up previously unknown worlds of taste.

Best-seller now available in returnable lightweight glass bottle

But with a market share of over 30 percent, the brewery's distinctive high-strength Mohrenbräu Spezial is the front runner in the range. Since 2022, this beer has also been available in the 0.33-litre lightweight glass bottle by Vetropack. A special process is used to manufacture this returnable bottle, which weighs a mere 210 grams (instead of 300 grams). Thermally tempered glass reduces wear on the contact surfaces (scuffing). It is already three years since Mohrenbrauerei began using Vetropack's lightweight glass bottles for its Pfiff "March Beer" and Radler varieties: this cuts logistics costs because the volume that needs to be moved from A to B is reduced by 1,000 tonnes per year. "And for Mohrenbräu Spezial, the savings will turn out to be many times greater," Linder is delighted to point out. "This fits excellently with our image as an innovative and sustainable brewery that



the lightweight glass experiment. That really put us ahead of our time, because a packaging change of this sort shouldn't be underestimated. It includes detailed product tests – how does the bottle feel, how does the beer behave in it, what does the label look like, and so on. Then the process has to be coordinated with everyone involved and, finally, there is the technical conversion of the bottling plants. But at the end of the day, it's the market or the end customers who decide whether the product will be a success. On that front, it's no exaggeration to say that we encountered some scepticism at the start. And for a long time, the sustainability issue didn't have the priority that it now enjoys. Fortunately, things have changed: nowadays, it's important for many customers – and some of them are even specifically looking for sustainability."

"Back then, Mohrenbrauerei was the only brewery in Austria that was willing to commit to the lightweight glass experiment. That really put us ahead of our time."

Andreas Linder

values and promotes social solidarity – to take another example, we also meet our entire energy requirement with green power." Overall CO₂ emissions per bottle are slashed by no less than one quarter as compared to a normal 0.33-litre returnable bottle.

A sustainability pioneer

Another reason for this is that the crates containing the lightweight glass bottles are shorter, so they can be stacked six-high on a pallet instead of five-high as before. So, all in all, this is a major step on the path towards more sustainability – and the history of this journey goes back a long way: the first discussions between Vetropack and Mohrenbrauerei took place as long ago as 1998. "Back then, Mohrenbrauerei was the only brewery in Austria that was willing to commit to

So Vetropack's 0.33-litre returnable bottle for Mohrenbräu Spezial comes at exactly the right time. It offers an appropriate way of improving the climate footprint and making beer more sustainable. But that's not all: at a time when overall beer consumption is declining throughout the world, it also opens up access to new target groups for Mohrenbrauerei: for example, people who pay particular attention to the environment and those who have limited carrying capacity or prefer smaller quantities.

Soon for 0.5 litre bottles as well?

Andreas Linder sums up: "Of course, we pioneered the lightweight glass bottle from Vetropack, and we shall miss that unique status as the new packaging becomes more widespread in the market. But the advantages are clear to see, and the potential is simply gigantic. So we're proud that we played our part in this – and, who knows? It might soon be time to extend this approach to the 0.5-litre bottles. Although nothing specific is planned as yet, in principle I see no reason why the success story shouldn't continue in this direction."



HALLMARK

Glass – the infinitely reusable packaging material

All of us are striving for a more sustainable future. Throughout Europe, people are stepping up their efforts to reduce their ecological footprint. Their expectations are crystal-clear: businesses should be doing more to help them make more sustainable choices.

The glass packaging industry has long been a trusted partner that helps businesses and private individuals to fulfill these wishes. Glass is recyclable, and it protects the integrity of the product inside. If we are to work together to bring about a more sustainable future, we must remind the world of what it already loves about glass, and of the valuable part it can play in turning this vision of the future into a reality. This is why the Glass Hallmark has been created.

which have come to be universally recognised by consumers and industry alike. By communicating the special character of glass packaging, you can enhance the ecological, social and economic sustainability value of your entire product portfolio. You will remind consumers that glass is an infinitely reusable and reprocessible packaging that is already recycled extensively – and also that it is an inert material which protects the product inside and ensures its shelf life.

Consumers are increasingly aware of sustainability, and conscious of the impact of their own purchasing choices. Packaging remains one of the best channels for communication – as proven by initiatives such as the Fairtrade logo,



Heightened awareness

The Hallmark is intended to remind consumers of what they love about glass, and how easy it is to recycle.



Glass is natural.

Glass is authentic, and it does not pollute the environment: it is manufactured from raw materials that occur in nature.



Glass can be recycled an unlimited number of times.

Glass is 100% reusable and it can be recycled endlessly with no loss of quality.



Glass preserves product quality.

Glass is inert, and it acts as a secure barrier against external influences. As well as protecting product quality, it safeguards the health of the people who use it.



Glass is caring.

Choosing glass protects the health of our environment – and our own health.

STUDY ON MIGRATING CHEMICALS

“Merely the tip of the iceberg”

Packaging protects food against harmful influences during storage, transport and sale. However, new studies show that research into health risks caused by migrating chemicals has so far remained at a very rudimentary level. If anything, these risks may be far greater than assumed until now.

All of us know that packaging plays a key role in our globalised food market. In fact, there are many cases where packaging is indispensable because it allows food to be kept for longer and transported over long distances. Equally, however, we have known for a considerable time that packaging can also be an important source of chemicals that migrate from it into food.

The effects of these substances – known as food contact chemicals (or FCCs) – have been the subject of numerous scientific studies over the last half-century. And there is even clear evidence to prove that at least a small number of these FCCs have a negative influence on human health¹.

Focusing on how FCCs impact health

To take just one example: a study recently published by European scientists² shows that at least 29 chemicals – including bisphenols and phthalates – used in a wide variety of packaging types present significant risk factors for reduced sperm quality, as well as other negative effects. This study shows “alarming exceedances of acceptable combined exposures” to various synthetic chemicals which people encounter in their everyday lives from many different sources – including food packaging. Considering only the nine chemicals monitored in urine, “acceptable exposures” to chemicals of particular concern were exceeded by 17-fold. In highly exposed males, the index value was even exceeded by more than 100-fold.

Results of this sort are all the more alarming in view of the dramatic negative trend in fertility that has already been documented among the male population for several decades. This is why scientists are calling on the authorities to act quickly – and in particular, to impose a ban on bisphenol A (BPA) in materials that come into contact with food.

Study reveals major gaps in knowledge

However, this could merely be the tip of the iceberg – as shown by another recently published international study on which I myself collaborated actively. This work aimed to produce a systematic overview of all chemicals that have

ever been measured in food contact materials, including their packaging. The Database on Migrating and Extractable Food Contact Chemicals (FCCmigex) contains information from a total of 1,210 studies³.

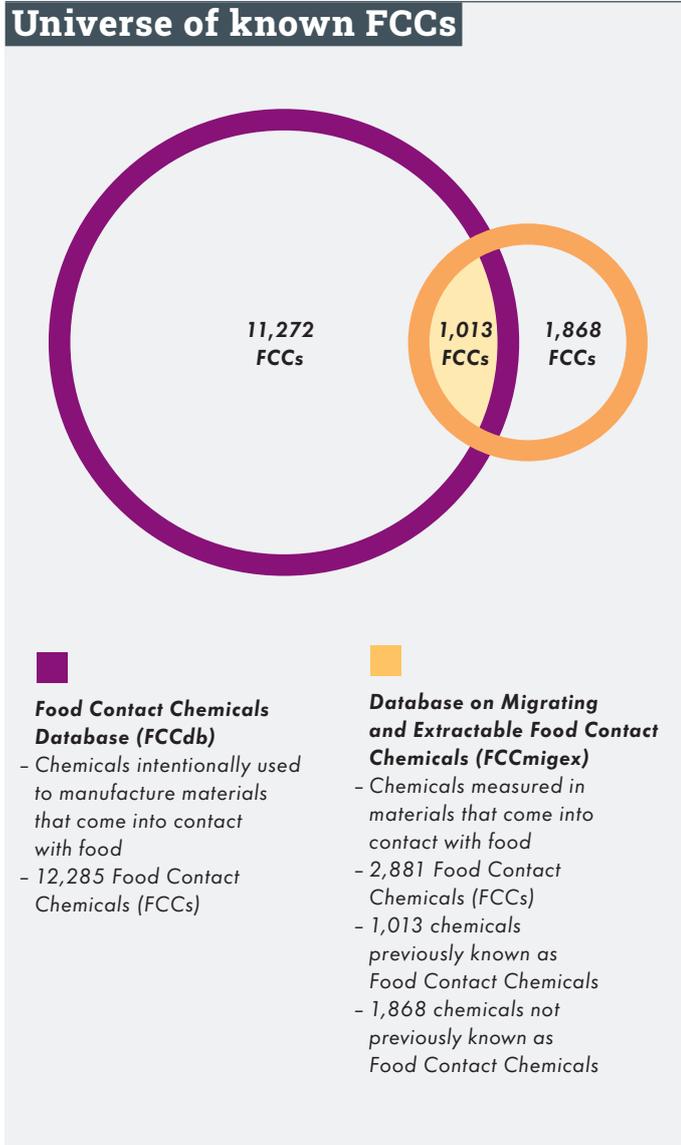
The results are astonishing: we discovered that all in all, 2,881 FCCs have thus far been detected in a total of six groups of food contact materials (FCMs) – including plastics, paper and board, metals, multi-materials (such as beverage cartons),



The author Since 2012, Dr. Jane Muncke has been Managing Director and Chief Scientific Officer of the Food Packaging Forum, a charitable foundation in Zurich. She is trained as an environmental toxicologist (PhD) and environmental scientist (MSc), and has a background in academic research on food contact materials such as plastics used in packaging.

glass and ceramic materials. But the most surprising finding was that until now, about 65% of these chemicals had been completely unknown as substances used in food contact materials. Our results show that at least 14,153 chemicals are used in packaging for food and also in processing equipment

and storage containers, etc. (see the chart below). The most disconcerting aspect of this result is that we know practically nothing about the way many of these FCCs impact human



health. We do not know how harmful they are when small quantities of them are ingested with food on a daily basis, nor whether they remain permanently in our bodies, nor yet how they interact with one another when they migrate in mixtures from packaging into food. This came as a surprise to me, because we really do assume that the authorities are keeping a close watch on this. In actual fact, however, this is not the case – and chemicals in food packaging are largely uncontrolled.

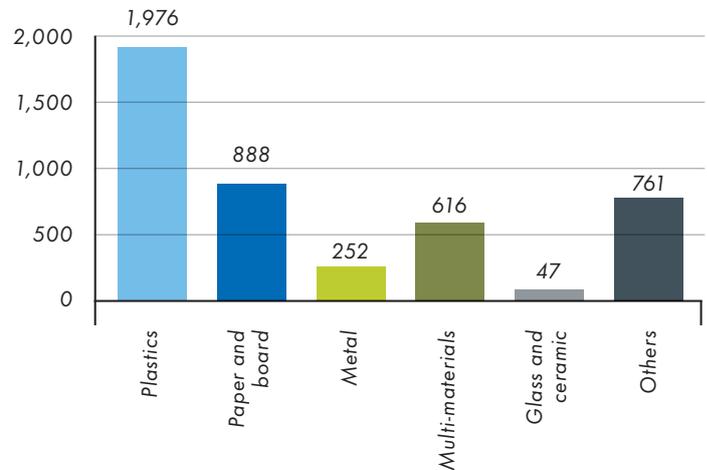
Another noteworthy aspect was the distribution of FCCs across the various material groups. It is not altogether surprising, for

“Glass and ceramics have by far the smallest number of measured food contact chemicals.”

Jane Muncke

instance, that a disproportionately large majority of the FCCs was detected in FCMs made of plastic, while glass and ceramics had by far the smallest number of measured FCCs (see the chart below). This has to do with the fact that plastics are synthetic – that is to say, human-made materials that consist of very many different synthetic chemicals, some of which are in fact completely unknown. Plastics, therefore, are highly complex materials. Glass and ceramics, on the other hand, are very simple in comparison: they are made from a small number of raw materials, so they are very well characterised. No unknown substances occur in these materials.

Proven FCCs per type of food contact material



Number of chemicals measured in the Database on Migrating and Extractable Food Contact Chemicals (FCCmigex), broken down by materials. Measurements of chemicals in plastics are the most frequent: in this material group, a total of 1,976 different chemicals have been measured to date. Illustration: Birgit Geueke of the Food Packaging Forum.

In overall terms, our results underscore the urgent need to investigate and document the effects of FCCs in more detail – and this should have been done even before they were utilised on a large scale, as they already are today. However, this is an enormously time-consuming and resource-intensive task

because of the large number of chemicals that require better investigation. For these reasons, it is important to restrict the use of FCCs and only to use materials that have been properly investigated and found to be harmless – such as glass and ceramic materials or stainless steel, whose chemical compositions are precisely known and from which few if any chemicals migrate into food.



¹ Muncke, J. et al. (2020) "Impacts of food contact chemicals on human health: a consensus statement." *Environmental Health* 25(20). (Summary: <https://www.foodpackagingforum.org/news/scientific-consensus-statement-on-food-contact-chemicals-and-human-health>).



² Kortenkamp, A. et al. (2022). "Combined exposures to bisphenols, polychlorinated dioxins, paracetamol, and phthalates as drivers of deteriorating semen quality." *Environment International*. DOI: 10.1016/j.envint.2022.107322. (Summary: <https://www.foodpackagingforum.org/news/study-identifies-chemicals-driving-semen-quality-deterioration>)



³ Food Packaging Forum (2022). "FCCmigex Database." <https://www.foodpackagingforum.org/fccmigex>

Trezzano - IT

From the springs of the Geracesi mountains

The white glass bottle has a unique decorative touch: the word "Geraci" is engraved into the body of the bottle. Simple, practical and reduced to the essentials – its elongated shape reflects the very nature of water: authentic and pure.



Hum na Sutli - HR

A product made from the heart

A new market presence has been developed in collaboration with Smith Lumen, the renowned Italian agency. This sophisticated yet effective design in the form of a relief below the label was applied to the packaging by Vetropack experts.



Nemšová · SK

Homage to the Slovak tradition

'Blueprint' has been popular in Slovakia as a dyeing technique since the beginning of the 18th century. This special edition in a vibrant blue bottle is an eye-catcher not only because of its unusual colour but also thanks to its clear lines.



Kremsmünster · AT

Italian dolce vita

The requirements for the bottle design: a blend of tradition and authenticity. Successfully implemented by the "Birra Moretti" wordmark in glass relief around the base area, combined with the eye-catching label.



Kremsmünster · AT

Mighty midgets!

This tasty snack from Berglandmilch comes in an unusual glass container: a special neck was developed for these small jars to allow heat-sealing of the flanged blanks. The overall weight of the packaging is also reduced significantly thanks to this blank.



Kremsmünster · AT

Now with a brand-new look

A complete design relaunch for Gurktaler, the traditional Alpine herbal liqueur: the shape of the bottle also has a new look that pays tribute to the ancient walls of Gurk Abbey. This redesign shows how traditional and modern elements can complement each other perfectly.



Exceptional elegance

The gentle curves of a champagne bottle combined with the slender lines of a wine bottle: a creative design that strikes an exceptionally elegant note – just like the new Organic Rosé Moments from the Markus Huber winery, which commissioned Vetropack Austria to design this unique shape.



Lightweight, stable and sustainable: echovai

The echovai technology showcased at Drinktec is specifically designed to meet these requirements, marking a genuine breakthrough in the returnable bottle segment. echovai – a stable type of tempered lightweight glass bottle that saves material – was developed at Vetropack's Innovation Centre in Pöchlarn (Austria). The new bottles are up to 30% lighter in weight than conventional standard returnable bottles – and what's more, they have longer lifetimes and are more resistant to wear and tear.

→ Would you like to test this new technology?

If so, simply order a sample by emailing us at: echovai@vetropack.com – and enjoy the crystal-clear benefits (as long as stocks last).



EXPERIENCE VETROPACK!

Trade fairs · Exhibitions and events

Which trends and challenges are shaping the industry's future, how are technologies continuing to evolve, and which innovations are transforming glass packaging? Learn more at one of our events!

Take advantage of the opportunity for a face-to-face discussion so you can get to know Vetropack better: broaden your

industry expertise by attending our presentations and exhibitions, or visit us at a trade fair to see our innovations for yourself. Our experts are keen to strike up a dialogue with you so we can exchange ideas about new developments. We would be delighted to welcome you at one of the many events staged by the Vetropack Group, either this year or next year!

	LOCATION	COUNTRY	DATE
HOT HOT HOT. Glass, ceramics and porcelain from A to Z	Prague	Czech Republic	14.04. – 02.10.2022
Structia: Industrial Installations	Krapina	Croatia	05.09. – 18.09.2022
Drinktec: the world's leading trade fair for the beverage and liquid food industry	Munich	Germany	12.09. – 16.09.2022
Simei: International Enological and Bottling Equipment Exhibition	Milan	Italy	15. – 18.11.2022
Swiss Packaging Institute (SVI) Annual Conference: Food Packaging of the Future	Zurich	Switzerland	17.01.2023
EMPACK: The Future of Packaging	Zurich	Switzerland	25.01.2023
BrauBeviale 2023: Capital Goods Exhibition for the Beverage Industry	Nuremberg	Germany	14.11. – 16.11.2023

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