Environment-friendly packaging now upgraded by VETROPACK's Echovai bottles

At Drinktec in Munich last month VETROPACK showcased Echovai, the group's pioneering returnable bottle in tempered, lightweight glass - another innovative solution from this leading European manufacturer of glass packaging.

As confirmed by a pilot project with the Austrian brewery Mohrenbrauerei, an Echovai-treated bottle doesn't only impress with its lighter weight but also with its resistance to abrasion - which results in higher circulation rates. With Echovai the containers aren't only more durable. Logistics effort and CO2 emissions per bottle are reduced too.

LIGHTWEIGHTING

For years now, studies have shown that reusable glass containers rank among the most sustainable and environment-friendly packaging types. For glass bottles, only their weight and resistance were considered to be weak points. As a new solution, Echovai's conspicuous improvement of these elements has Vetropack making a significant splash among glass packaging manufacturers. It's a particularly robust and material-saving form of lightweight glass bottle that's up to 30 percent less, weight-wise, than standard returnable bottles - and it's more abrasion-resistant. As Daniel Egger, Head of Innovation at Vetropack explains: "This makes Echovai bottles a truly superior solution, both economically and ecologically - potentially transforming the market for returnable glass containers." Egger was also among those responsible for the development of Echovai.

THERMAL PROCESSES

Tempered glass isn't a new idea in itself. For many years it's also been successfully applied in other areas - such as car windscreens. Lately, however, the process has had its limitations in glass packaging. Thermal treatment, which ultimately makes glass more stable, requires early adopters to accept certain design limitations simply owing to shape. Says Egger: "At our Echovai plant, the

biggest challenge with processing is variation in wall-thickness distribution. Only high-quality, uniform bottles can be successfully tempered. That's because their thermal treatment builds up a stress sandwich."

A special thermal process ensures a high level of robustness. In fact, the Echovai process makes exceedingly high demands upon production owing to the elevated heat-up and rapid cool-down of the bottles. That applies to the quality of the material no less than to the production process and systems. "Fortunately, at Vetropack we work with bottles of high quality," says Egger. "We also adjust the entire tempering process, very precisely, to the individual container and its shape. It's a very sophisticated, technologically-demanding process that can't be easily implemented - hence our phased approach to roll out."

It took around ten years of development work at the Vetropack Innovation Centre for Echovai to become reality. The robust lightweight glass containers are still produced exclusively at the plant in Pöchlarn, Austria. In phase one over the last three years, millions of bottles have been successfully sold and refilled by pilot customer Mohrenbrauerei, with extensive tests confirming the extended life span and durability of the bottles. In phase two, select new projects will show how and which other Vetropack plants will need to be readied for Echovai production - as requirement for meeting the demand for Echovai bottles across Europe. "We expect this demand to grow very quickly," says Daniel Egger, "especially since Echovai's performance in our pilot project has really been outstanding." Phase three will see the possibility of licensing technology, as well as know-how, to third parties - all to allow for a wider market introduction.

PILOT CUSTOMER DRAWS OUTSTANDING ECOBALANCE

As the first Vetropack customer, Mohrenbrauerei (in Vorarlberg, Austria) has used Echovai containers for its 'Pfiff Märzen' beer as well as its 'Radler' varieties over the past three years. They're already planning to move more of their beer specialties into these innovative lightweight glass bottles. A look at the data shows why. For the 0.33-litre returnable bottles alone, use of the Echovai solution (210 grams) shows a weight-saving of around a third compared to the standard bottles used formerly (300 grams). At the same time, the lightweight glass bottles can be stored six-high (instead of five-high) on a pallet owing to their reduced height. This has considerable effects upon logistics volume: in the case of the 'Pfiff Märzen' beer and the 'Radler' varieties, a reduction by around 1.000 tonnes per year was achieved. As a result, CO2 emissions per bottle fell to only a quarter of the normal 0.33-litre returnable bottle.

As for robustness, the solution is also showing strong performance. Not only do fewer bottles break during industrial use but after three years and up to 12 cycles, the containers have so far shown hardly any wear on the contact surfaces (scuffing). "A large part of them can still be classified 'good as new' - which is hardly the case with standard bottles after so many cycles," explains Egger. "Here's why we expect Echovai bottles to achieve a markedly higher number of cycles – which makes them an even more compelling solution compared to standard bottles."

ANTICIPATED IMPACT ON THE MARKET

As the environment-friendly option also for products in one-way bottles, Echovai bottles are an alternative not only for beverage producers who already sell their products in returnable bottles. Here Egger and his colleagues also see great potential for the new Vetropack solution in the segment of one-way glass containers. That's because, until now, it's often been the weight increase that plays a decisive role. As such, Echovai could promote the switch to returnable bottles, since brand owners usually want to keep their unique bottle characteristics. "Our long-term goal is to have a more user-friendly return and refill system with 100 percent bottle reuse," explains Egger. "For instance, we're already working on a solution for optimised traceability of our Echovai bottles. By applying a specific data matrix code to each bottle, we'll soon be able to link any data to the individual product unit. This can allow us to link differentw parts of the value chain, which are currently viewed separately, and to trace them through the entire supply chain - from production and bottling to the end-customer and back again - thus also marking the dawn of a new era of digital interlinking." ■

ABOUT VETROPACK

Vetropack aims to enable people to enjoy food and beverages as safely as possible by providing solutions that combine optimum elegance with maximum responsibility. The group approaches glass as the most sustainable packaging solution – and the perfect material to ensure that food is packaged safely. Its holistic Service plus+ approach helps customers to optimise their value chains and better guarantee consumer safety. Close, long-lasting relationships are the hallmarks of Vetropack's collaboration with partners. Guided by its understanding of environmental responsibility and cost efficiency, the group aims to minimise its carbon footprint throughout the supply chain, and is committed to recycling as the key to optimising product life-cycles.

Vetropack is among Europe's leading manufacturers of glass packaging for the food and beverage industry, with around 4.000 employees and net revenues of CHF 816.5M in 2021. It has state-of-the-art production facilities as well as sales and distribution offices in Switzerland, Austria, the Czech Republic, Croatia, Slovakia, Ukraine, Italy, the Republic of Moldova and Romania.

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