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Unfurling the Kinks:

Glass Manufacturers and Suppliers Work to Build a Stronger, More Climate Friendly Glass Supply Chain

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Katherine Martine is the assistant editor for *WineBusiness Monthly*. She joined the company in 2023 and is responsible for assisting the managing editor with production duties for the monthly trade magazine and the website. Katherine has five years' experience working for various weekly news publications in Sonoma and Marin County covering city government, education, natural disasters, local business, public safety and agriculture and wine. Most recently she worked as a beat reporter with *The Ark* newspaper in Tiburon. She earned her Bachelor of Arts in journalism from San Francisco State University.

WHEN IT COMES TO making the glass supply chain, from manufacturing to distribution, more environmentally friendly and resilient, there isn't one silver bullet.

Instead, there are several methods and initiatives that glass manufacturers and suppliers are implementing at various stages to build a stronger, less vulnerable and more climate-friendly supply chain with fewer kinks. These include adjusting the manufacturing process by utilizing hybrid furnaces and recycled glass, lightweighting bottles and establishing reuse programs.

While glass providers have made strides to address the climate side of sustainability, the rampant outbreak of COVID-19 severely affected the glass supply chain and many wineries across the globe saw shortages in packaging, highlighting problems of short-term viability.

"The last two years have been very challenging for the industry," said Felix Lamolinerie, Verallia USA's CEO. "With COVID, the overall worldwide supply chain was—has been—totally disrupted. The fact that we had a slowdown and then a quick recovery completely disorganized the flow in our industry (more) than I believe any industry in the world. It was really difficult and our customers suffered a lot from the delay; from backlog to congestion at the port, (to) the excessive amount of costs that were charged by any freight company. It was really a painful moment for everyone."

The Russian invasion of Ukraine in February 2022 also upset the chain and proved a big disruption, increasing the cost of energy, according to Lamolinerie.

Rich Chapman, senior vice president and chief supply chain officer for Saxco, said he thinks the biggest challenge these events have created has been around capacity.

Chapman said the COVID-related backlog situation was a direct result of demand going up significantly and capacity being constrained.

"A big part of that was because the import market, which helps supply some of the glass in the U.S., was basically squeezed down or almost shut down and because of that all of the demand went to the domestic manufacturers—but they only have a limited amount of capacity so they could not keep up," Chapman noted.

Fixing this particular issue isn't so simple, and Chapman added that one of the key things to understand is that building a glass facility in the U.S. requires a not-insignificant investment and the cost to construct a green plant in the U.S. could run anywhere from \$150 million and up, as well as take approximately four to five years to complete. Chapman called it a "long-horizon investment," and said the glass suppliers must sit there and say, "is there going to be demand five years from now to the point that it makes sense to build an \$150 million investment in a factory?"

"It's very hard for people to see the crystal ball and understand what demand will be like five years from now," he said.

So, how to deal with capacity, backlog, and other long-term issues? *WineBusiness Monthly* spoke with several glass providers to look at the aforementioned efforts they're implementing at various stages of the supply chain to better prepare for the future and help build resiliency into the chain.

Extending the Bottle's Life: Considering Reuse Options

Conscious Container, a startup founded by Caren McNamara, washes and sells glass bottles in an effort to reduce carbon emissions and mitigate supply chain issues, and now it's working on designing an industry-standard refillable bottle. McNamara made the announcement during the Napa RISE Wine & Climate Symposium April 5-20 in St. Helena, Calif. and said they're working with a glass manufacturer who is going to design the bottle.

Whether they'd offer the program just in the Napa/Sonoma region or elsewhere, and how they'd want to bring it to market are elements of the new program that still need to be worked out, but she said the goal is that the bottle wouldn't cost any more than a single-use bottle.

One of the reuse services Conscious Container currently provides is contract washing where a customer ships them the bottles, which are then run through a commercial and industrial system for cleaning and then shipped back to the customer for reuse.

"Within the wine industry, we know for sure there's at least three billion glass bottles packaged annually in California and of that, about 1 to 1.5% is wastage and within that wastage, they are we know at least 20 to 25% of that wastage—based on our experience so far—is perfectly good glass," McNamara said.

The organization is also working on refillable tasting room programs in which the bottles used to pour wine during tastings are sent to Conscious Container, washed and sent back to the winery for reuse; though with this program, the bottles need to have wash off labels.

In terms of how these services benefit the supply chain, McNamara said it helps with the availability of glass for small and medium sized wineries.

"I think there's two categories of wine producers, one is very large wine groups and portfolio groups that order their glass way in advance and they have POs for large quantities, those folks tend to not be so impacted by the supply chain of glass, typically. Where we speak about reuse, it allows medium and small wineries an additional option to obtain glass for shortages," she said, adding, "I believe the supply chain benefits from an availability perspective from a reusable, circular system."

In addition, she said the cost of their glass is not only competitive but in the long term, it will cost less.

"For the supply chain it mitigates some of the risk for glass supply, period. That's a very attractive offer in a world that's a little bit unpredictable," McNamara said.

What about reuse benefits in terms of the carbon footprint? She said in a mature model of refillable glass, data from multiple LCAs states that a refillable glass bottle has an 85% lower carbon footprint than a single-use glass bottle. Currently, she said wineries are saying 25%—and she's seen up to 50%—of their carbon footprint sits in that glass bottle alone.

She said lightweighting the glass definitely begins to "nibble at the edges" of that carbon footprint, maybe by about 8 to 10%.

She said she believes there's more openness in Europe towards the reuse concept and they're ahead of us in terms of setting up and putting refillable programs in place, though they're very small and regional. **WBM**