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# REDUCTION IN GLASS BOTTLE WEIGHT

CRIMSON WINE GROUP



## ABSTRACT

Our primary objective was to lighten our glass weight to reduce our carbon footprint. Our glass weight has been reduced by 13% leading to an estimated reduction of 8% in our carbon footprint.

During that exploration we've discovered other benefits beyond reducing our glass use such as simpler logistics, lower transportation footprint and higher warehouse usage.

## SUSTAINABLE TARGET

- Reduce the distance between our glass producer and our bottling locations. Ideally the glass production should be located within 1,000 km of the bottling locations
- Reduce the average bottle weight by 10% from the current average bottle weight of 580 g/750ml glass bottle

## REASON WHY

Our understanding is that glass bottles can represent up to 60% of the carbon footprint of a bottle of wine due to the high energy required to make a glass bottle of wine as well as the high cost of transportation from the glass plant to the bottling center and from the bottling center to the final consumer. The carbon footprint of glass is proportional to its weight. We those facts in mind, we thought that reducing our average glass weight would be the most important action we could take to reduce our global carbon footprint. Additionally, most of our glass was produced 8,800 km away from our bottling adding unnecessary transportation and logistical burdens.

## COMPANY SUMMARY

Crimson Wine Group owns six wineries and associated estate vineyards on the West coast of the United States and sells wines at an average retail price point of \$25 per bottle. Our wineries are located in Napa Valley, Sonoma Valley, Edna Valley, the Dundee Hills, and eastern Washington

## WEBSITE

<https://www.crimsonwinegroup.com/>



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## START DATE

03/01/2019

## END DATE

10/31/2019

## PARTNERS

na

## DESCRIPTION & STRATEGIES

The first step was to audit all of our different glass molds across our estates. From there we've started to discuss harmonizing the different shapes we were using in order to simplify purchasing and gain flexibility.

The second step was to interview domestic glass manufacturer and audit their processes and costs. Rapidly we found a local supplier that was able to match the pricing from our previous sourcing especially since we were reducing our glass weight in the process.



**PREVIOUS  
HEAVIER  
BOTTLE ON THE  
LEFT – CURRENT  
LIGHTER BOTTLE  
ON THE RIGHT**

**REDUCTION IN GLASS BOTTLE WEIGHT**



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## DESCRIPTION & STRATEGIES (CONT)

During that audit we have discovered that all the supplies this glass manufacturer used (silica, limestone and soda ash) were mined locally. This knowledge increased our awareness of the entire glass manufacturing supply chain and helped us select a partner that also thought about its carbon footprint.

We then went to select glass molds with the manufacturer and tried to push down our average bottle weight as low as we could without compromising the brand image we were looking for.

Once an agreement was found we went to visit the manufacturer as a team to create a stronger bond between the teams.

## ACHIEVEMENTS SO FAR

In one year we have:

- Dropped our average bottle weight by 13% to 505 g/750ml. This is taking out 300 tons of glass out of production every year. Assuming 60% of our carbon footprint came from glass, we have dropped the entire operation's carbon footprint by 8%
- Reduced the transportation footprint from the glass manufacturer to our bottling lines by 8,300 km for each bottle transported
- Got us closer to our manufacturer and deepened our understanding of how glass is made. We are now sensitive about the entire supply chain and by the fact that our glass manufacturer sources all its supplies locally
- The drop in glass weight is allowing us to put more filled glass per truck by increasing our pallet sizes. We are able to reduce by 30% the number of trucks and store 30% more cases in our warehouses

## LESSONS LEARNED

- Do not assume that local supplies is more expensive
- A closely located supply chain is more reactive which saves on transportation and logistical costs
- It is important to understand how our suppliers are getting their own supplies – the entire supply chain is important



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## LESSONS LEARNED (CONT)

- Standardization of glass across the company leads to standardizing other parts such as pallet sizes, capsule diameter leading to less waste more flexibility

## NEXT STEPS

- Recommend to purchase one unit and integrate the Chlorine dioxide mister into the cleaning regiment at Pine Ridge Winery. We can then assess the machine and make recommendation if improvement can be made to the set-up. We could then move to incorporate the new system to our other wineries.
- Chlorine was faded out of the wine industry after it was discovered that the use of chlorine can lead to the development of TCA. But, according to the study from UC-Davis the use of chlorine dioxide does not have that same capability and is safe to use in the wine cellar. As a precaution against the development of TCA in the cellar, we will run monthly TCA atmospheric testing.

## POTENTIAL FOR REPLICATION

High