



Reimagining Wine Packaging for a  
Reduced Carbon Footprint

OREGON WINE



SYMPOSIUM

February 3 & 4, 2025

# Reimagining Wine Packaging for a Reduced Carbon Footprint

PROGRAM  
PRODUCER **oregon**  
wine BOARD

TRADE SHOW  
PRODUCER



Oregon  
Winegrowers  
ASSOCIATION EST 1981

OREGON WINE  
SYMPOSIUM

OREGON WINE



SYMPOSIUM

February 3 & 4, 2025

# Packaging Options & Carbon Reduction

Herb Quady, Owner,  
Quady North & Barrel 42 Custom Winecraft

PROGRAM  
PRODUCER **oregon**  
wine BOARD

TRADE SHOW  
PRODUCER



Oregon  
Winegrowers  
ASSOCIATION EST 1981



# Quady North/Barrel 42 2023 Greenhouse Gas Emissions

## Quady North | 2023 Greenhouse Gas Emissions Report

Displaying the wrong year? Change the year in the "General" tab.

Offsets Purchased for inventory year:  MT CO<sub>2</sub>e E.g. Third-party vendors  
Other Sequestration:  MT CO<sub>2</sub>e E.g. Permanently captured CO<sub>2</sub> from fermentation

### 2023 GHG Inventory

|                                 |                      |  |
|---------------------------------|----------------------|--|
| <b>661.6</b>                    | MT CO <sub>2</sub> e | total emissions  |
| <b>81.3</b>                     | MT CO <sub>2</sub> e | These emissions are in your direct control   |
| <b>151.1</b>                    | MT CO <sub>2</sub> e | Don't forget that you can purchase green power   |
| <b>466.5</b>                    | MT CO <sub>2</sub> e | Look for alternatives to lower these emissions   |
| Biogenic combustion*            | 2.6                  | MT CO <sub>2</sub> e Part of the natural carbon cycle  |
| Vinification/wine fermentation* | 40.5                 | MT CO <sub>2</sub> e Must enter cases of wine in General tab. Part of the natural carbon cycle |
| Carbon sequestration            | -28.8                | MT CO <sub>2</sub> e Vegetation absorbing carbon dioxide                                       |
| Credits and Offsets             | -8.6                 | MT CO <sub>2</sub> e Smart purchase options to lower your emissions                            |

### Intensity Metrics

|                                       |       |                      |                                |
|---------------------------------------|-------|----------------------|--------------------------------|
| Per case of wine (assumes 12 750mL bc | 0.01  | MT CO <sub>2</sub> e | Must enter data in General tab |
| Per acre of vineyard                  | 27.57 | MT CO <sub>2</sub> e |                                |
| Per acre of whole farm                | 6.62  | MT CO <sub>2</sub> e |                                |
| Per ton of fruit produced             | 10.67 | MT CO <sub>2</sub> e |                                |

### Emissions by Category

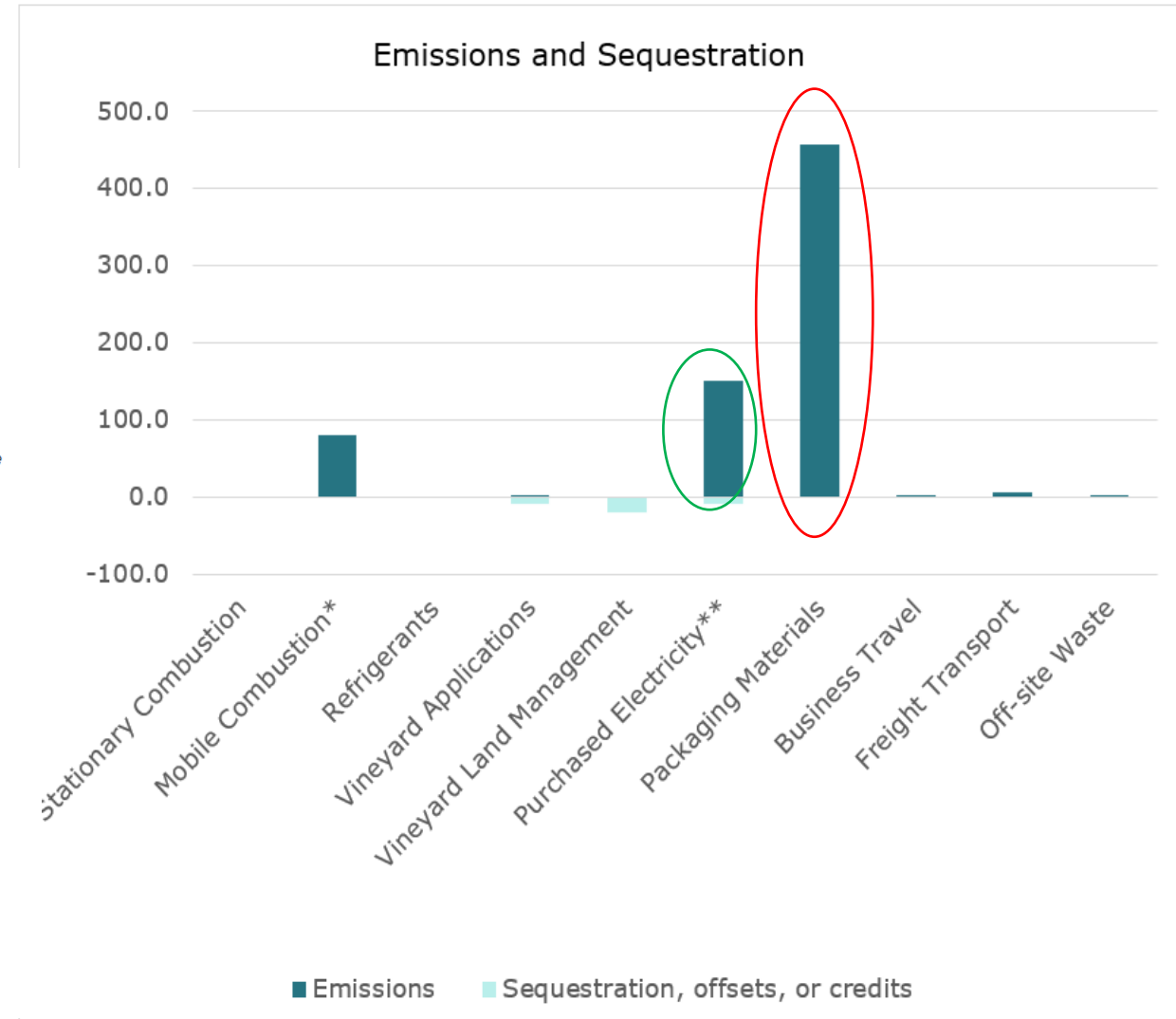
|                          | Emissions    | offsets, or credits |                      |
|--------------------------|--------------|---------------------|----------------------|
| Stationary Combustion    | 0.0          | 0.0                 | MT CO <sub>2</sub> e |
| Mobile Combustion*       | 80.6         |                     | MT CO <sub>2</sub> e |
| Refrigerants             | 0.0          |                     | MT CO <sub>2</sub> e |
| Vineyard Applications    | 0.7          | -9.0                | MT CO <sub>2</sub> e |
| Vineyard Land Management | 0.0          | -19.8               | MT CO <sub>2</sub> e |
| Purchased Electricity**  | 151.1        | -8.6                | MT CO <sub>2</sub> e |
| Packaging Materials      | 457.4        |                     | MT CO <sub>2</sub> e |
| Business Travel          | 1.5          |                     | MT CO <sub>2</sub> e |
| Freight Transport        | 5.8          |                     | MT CO <sub>2</sub> e |
| Off-site Waste           | 1.8          |                     | MT CO <sub>2</sub> e |
| <b>Total</b>             | <b>698.9</b> | <b>-37.4</b>        | MT CO <sub>2</sub> e |

Includes sequestration, credits, and offsets

\*Forklifts, delivery van

\*\* Only includes Quady North distributor case goods transportation

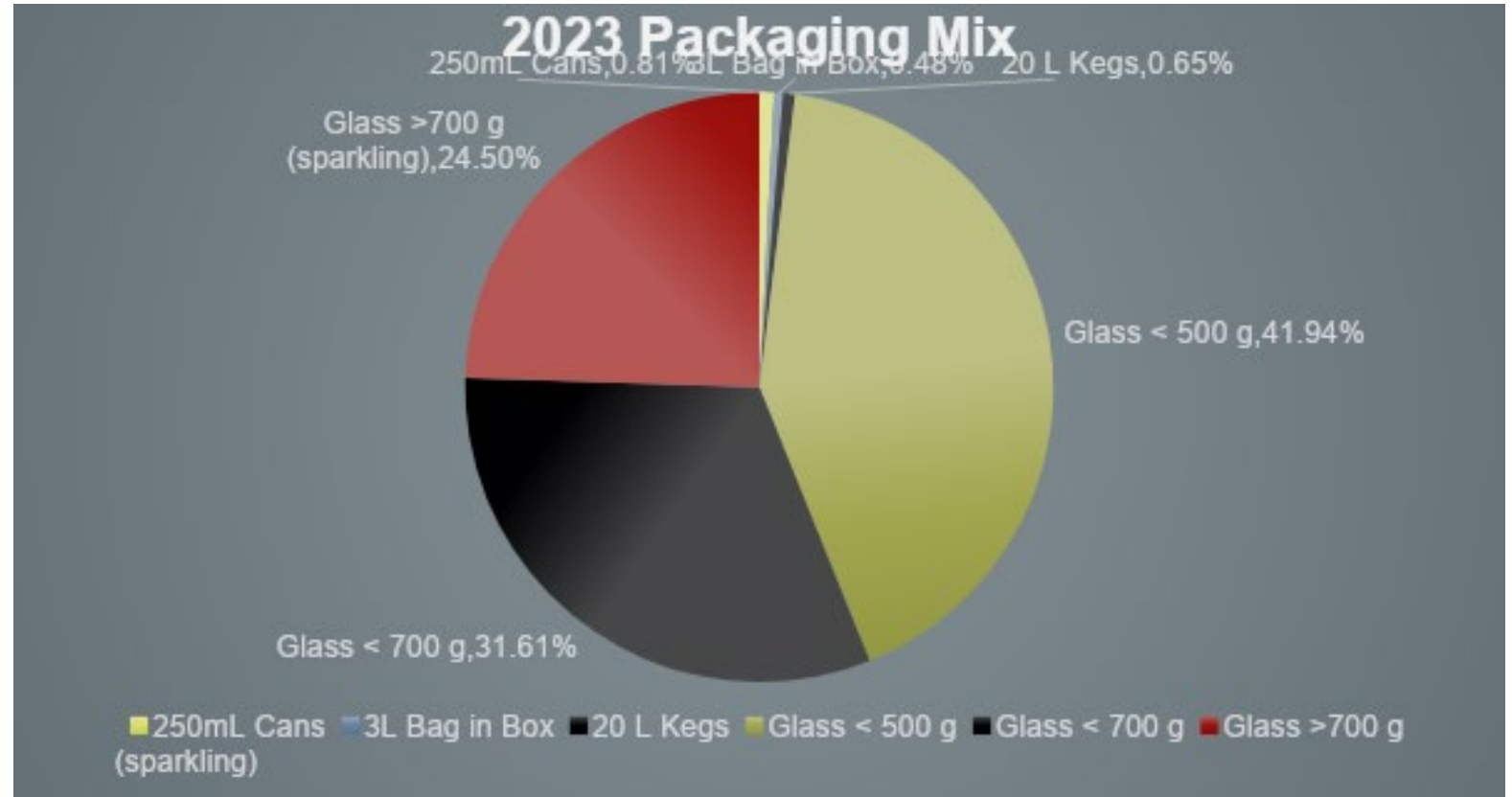
Source: 2023 LIVE Greenhouse Gas Calculator. Emissions calculations from raw data collected and self reported.



# QUADY NORTH/Barrel 42

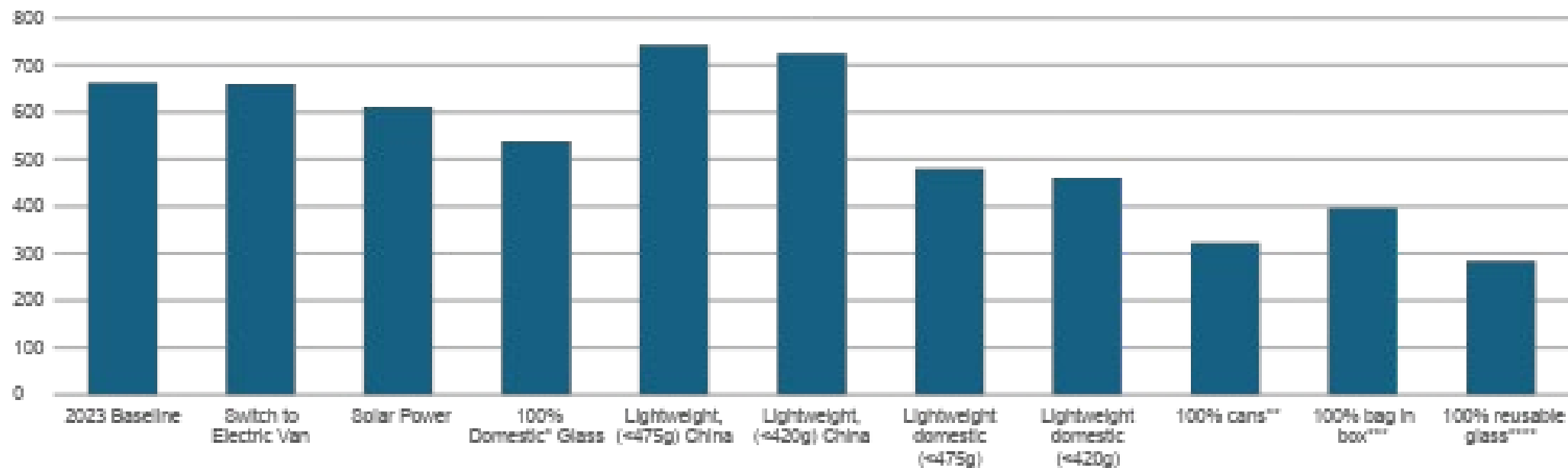
## 2023 Packaging (9L cases)

- Lots of room for improvement in sustainable packaging choices
  - Small amount of “alternative packaging” compared to total
  - Lots of heavy sparkling glass
  - 75% Domestic/25% Mexico
  - 43,769 cases produced
  - +75% Custom Crush



# What if? Comparing options for reducing GHG emissions

Total Winery CO2 Emissions (Metric Tons)



<sup>\*\*</sup>West Coast, various plants, 2023 mix of glass types

<sup>\*\*\*</sup> 250 mL slim line can

<sup>\*\*\*\*</sup> 3L Bag In "craft" cardboard box. Source: J. Overdest, Climate Consultant, Parametrix Inc.

<sup>\*\*\*\*\*</sup> 15 uses, (2017 Oregon DEQ Environmental Footprint Report)

# A Pathway to 65% CO2 reduction, the 5 year plan

| Action  | Tons reduced | Notes  |
|---|--------------|--|
| Switch to 840g Domestic Sparkling Glass           | 5            | Available Spring 2025 – Saxco 6095                               |
| Increase alternative packaging (cans, kegs, bags) | 9            | 1500 (9L) cases of these formats (8% of Quady North production)  |
| Phase out single use bottles (except sparkling)   | 298          | Replace with Revino molds as available                           |
| Install 150 kW Solar Array                        | 51           | Assumes 50% REAP grant approval and financing. 2026 installation |
| Replace delivery van with Electric Vehicle        | 3            | When current van needs replacing, probably 2029.                 |
| Energy efficiency initiatives                     | 9            | From ODOE and Energy Trust energy audit recommendations.         |
| Purchase Blue Sky Renewable Energy                | 91           | \$6000/year for 3060 blocks, increase as energy bills decrease   |
| Total   | 466          |  |

# 65% Reduction in Carbon Footprint by 2030?

## A realistic goal

### Quady North | 2030 Greenhouse Gas Emissions Report

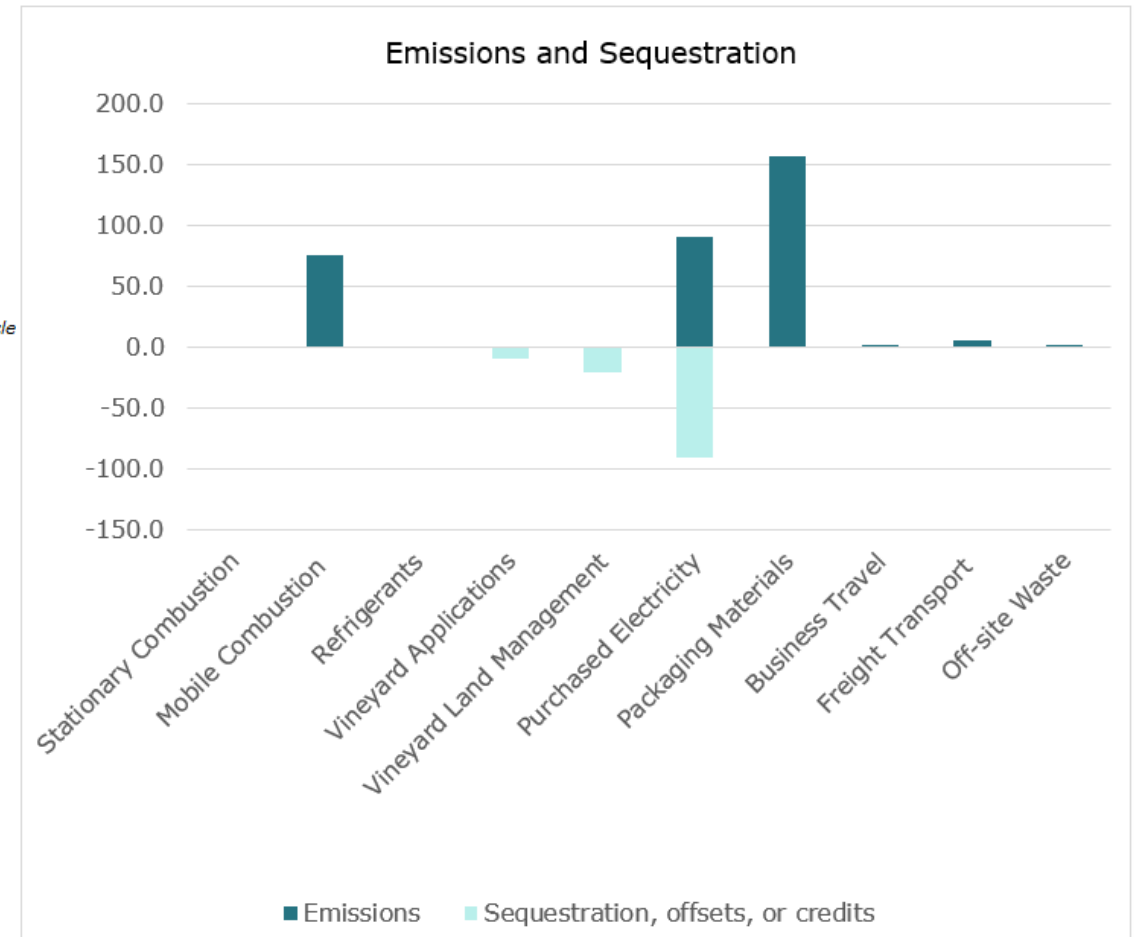
Displaying the wrong year? Change the year in the "General" tab.

Offsets Purchased for inventory year:  MT CO<sub>2</sub>e E.g. Third-party vendors  
Other Sequestration:  MT CO<sub>2</sub>e E.g. Permanently captured CO<sub>2</sub> from fermentation

|                                     |              |                      |   |
|-------------------------------------|--------------|----------------------|---|
| <b>2030 GHG Inventory</b>           | <b>214.3</b> | MT CO <sub>2</sub> e | total emissions   |
| Scope 1                             | 76.7         | MT CO <sub>2</sub> e | These emissions are in your direct control                                |
| Scope 2                             | 91.3         | MT CO <sub>2</sub> e | Don't forget that you can purchase green power                            |
| Scope 3                             | 166.1        | MT CO <sub>2</sub> e | Look for alternatives to lower these emissions                            |
| Biogenic combustion*                | 2.2          | MT CO <sub>2</sub> e | Part of the natural carbon cycle  |
| Vinification/wine fermentation*     | 39.6         | MT CO <sub>2</sub> e | Must enter cases of wine in General tab. Part of the natural carbon cycle |
| Carbon sequestration                | -28.8        | MT CO <sub>2</sub> e | Vegetation absorbing carbon dioxide                                       |
| Credits and Offsets                 | -91.0        | MT CO <sub>2</sub> e | Smart purchase options to lower your emissions                            |
| <b>Intensity Metrics</b>            |              |                      | Must enter data in General tab  |
| Per case of wine (assumes 12 750mL) | 0.00         | MT CO <sub>2</sub> e |   |
| Per acre of vineyard                | 8.93         | MT CO <sub>2</sub> e |   |
| Per acre of whole farm              | 2.14         | MT CO <sub>2</sub> e |   |
| Per ton of fruit produced           | 3.46         | MT CO <sub>2</sub> e |   |

| Emissions by Category    | Emissions    | offsets, or credits |                      |
|--------------------------|--------------|---------------------|----------------------|
| Stationary Combustion    | 0.0          | 0.0                 | MT CO <sub>2</sub> e |
| Mobile Combustion        | 75.9         |                     | MT CO <sub>2</sub> e |
| Refrigerants             | 0.0          |                     | MT CO <sub>2</sub> e |
| Vineyard Applications    | 0.7          | -9.0                | MT CO <sub>2</sub> e |
| Vineyard Land Management | 0.0          | -19.8               | MT CO <sub>2</sub> e |
| Purchased Electricity    | 91.3         | -91.0               | MT CO <sub>2</sub> e |
| Packaging Materials      | 157.0        |                     | MT CO <sub>2</sub> e |
| Business Travel          | 1.5          |                     | MT CO <sub>2</sub> e |
| Freight Transport        | 5.8          |                     | MT CO <sub>2</sub> e |
| Off-site Waste           | 1.8          |                     | MT CO <sub>2</sub> e |
| <b>Total</b>             | <b>334.1</b> | <b>-119.8</b>       | MT CO <sub>2</sub> e |

Includes sequestration, credits, and offsets



OREGON WINE



SYMPOSIUM

February 3 & 4, 2025

# The Packaging Perception Problem

Melissa Saunders, MW  
Founder of Communal Brands and Wine Queen

PROGRAM  
PRODUCER **oregon**  
wine BOARD

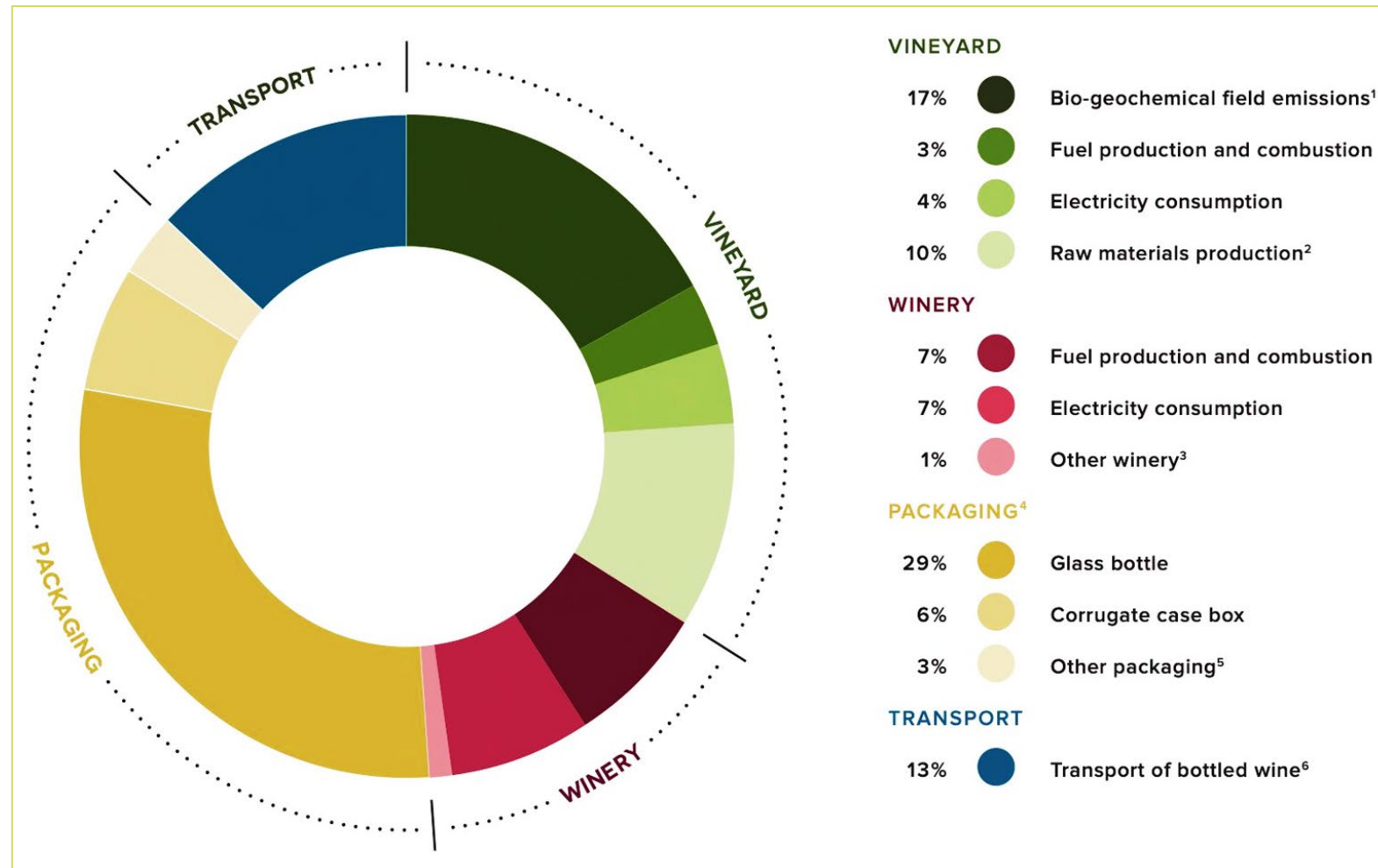
TRADE SHOW  
PRODUCER



Oregon  
Winegrowers  
ASSOCIATION EST 1981



# PACKAGING IS THE LARGEST CONTRIBUTOR TO CARBON EMISSIONS AND WASTE



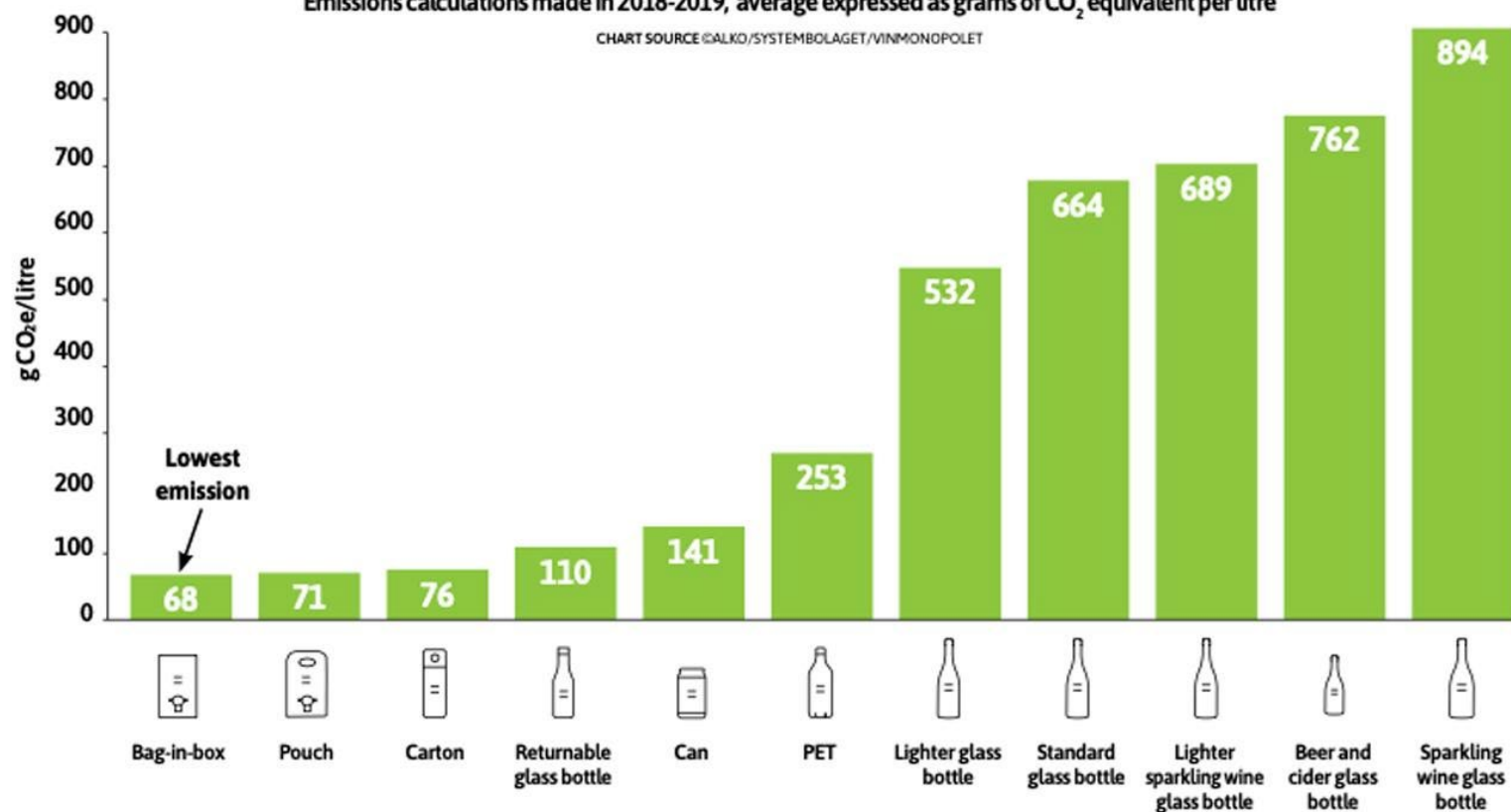
*Relative impacts of the carbon footprint of packaged wine (The Wine Institute, 2011 )*

# COMPELLING DATA ABOUT THE ENVIRONMENTAL IMPACT OF WINE PACKAGING

## Carbon emissions during manufacture of different packaging types

Emissions calculations made in 2018-2019, average expressed as grams of CO<sub>2</sub> equivalent per litre

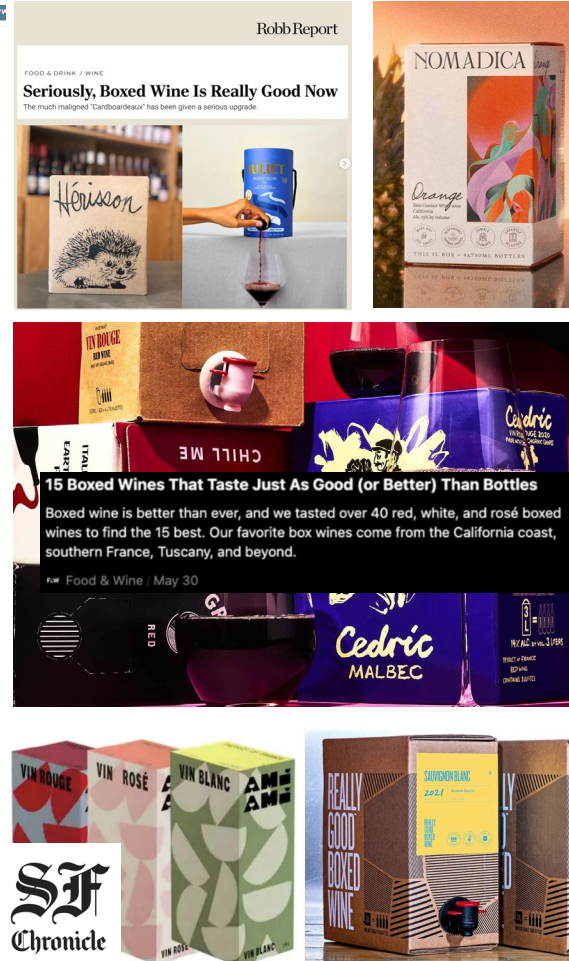
CHART SOURCE ©ALKO/SYSTEMBOLAGET/VINMONOPOLET



### DID YOU KNOW?

Reusable glass is the ultimate solution, as it generates zero waste.

# MORE DATA: BOX WINE TODAY



## PRACTICAL AND CONVENIENT

Easy to transport, store, and serve.

Extended shelf life once opened reduces waste

Perfect for everyday wines

## ENVIRONMENTALLY RESPONSIBLE

Significantly Less waste and emissions compared to glass bottles

Lightweight, efficient design furthering reducing carbon emissions

75% cardboard that is readily recycled

## HIGH QUALITY

Premium wines from family producers

Crafted using organic farming practices

Thoughtful winemaking

**AS AN INDUSTRY, WHAT HOLDS US  
BACK FROM TAKING MEANINGFUL  
STEPS TO POSITIVE CHANGE BASED ON  
THIS CURRENT, COMPELLING DATA?**

# 1. TRADITION

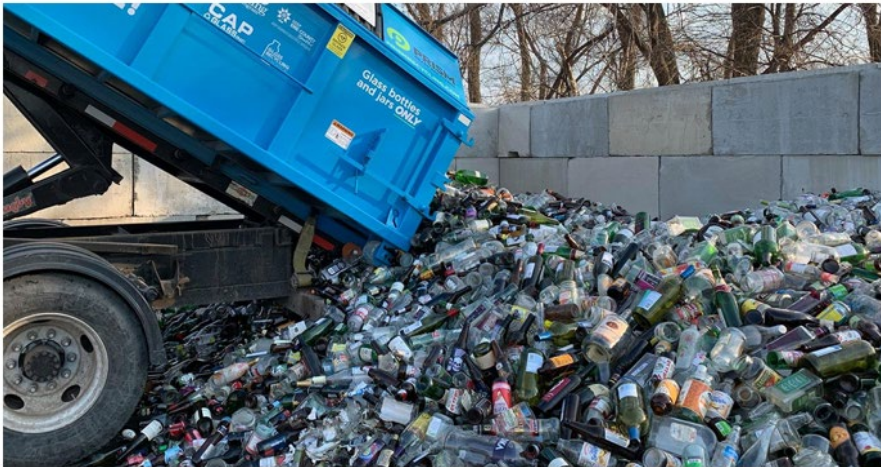
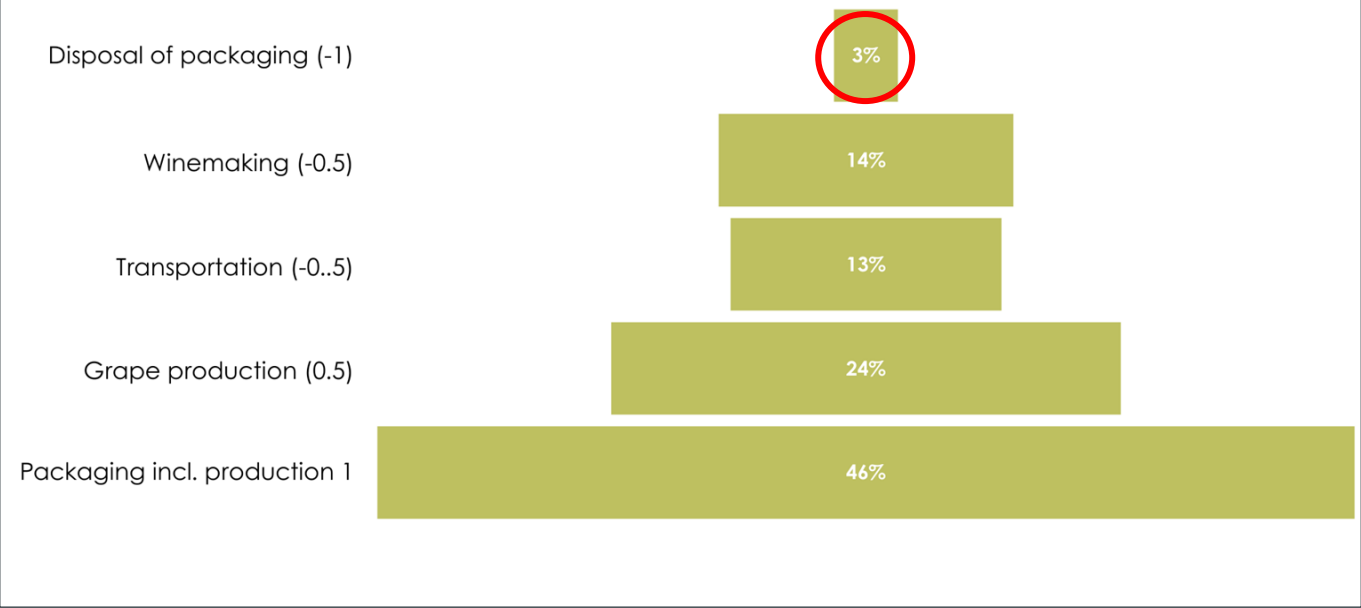
Today, **90% of wine** is sold in **single use glass bottles**



Have you ever heard the phrase: **Tradition is peer pressure from dead people??**

# 2. MISUNDERSTANDING

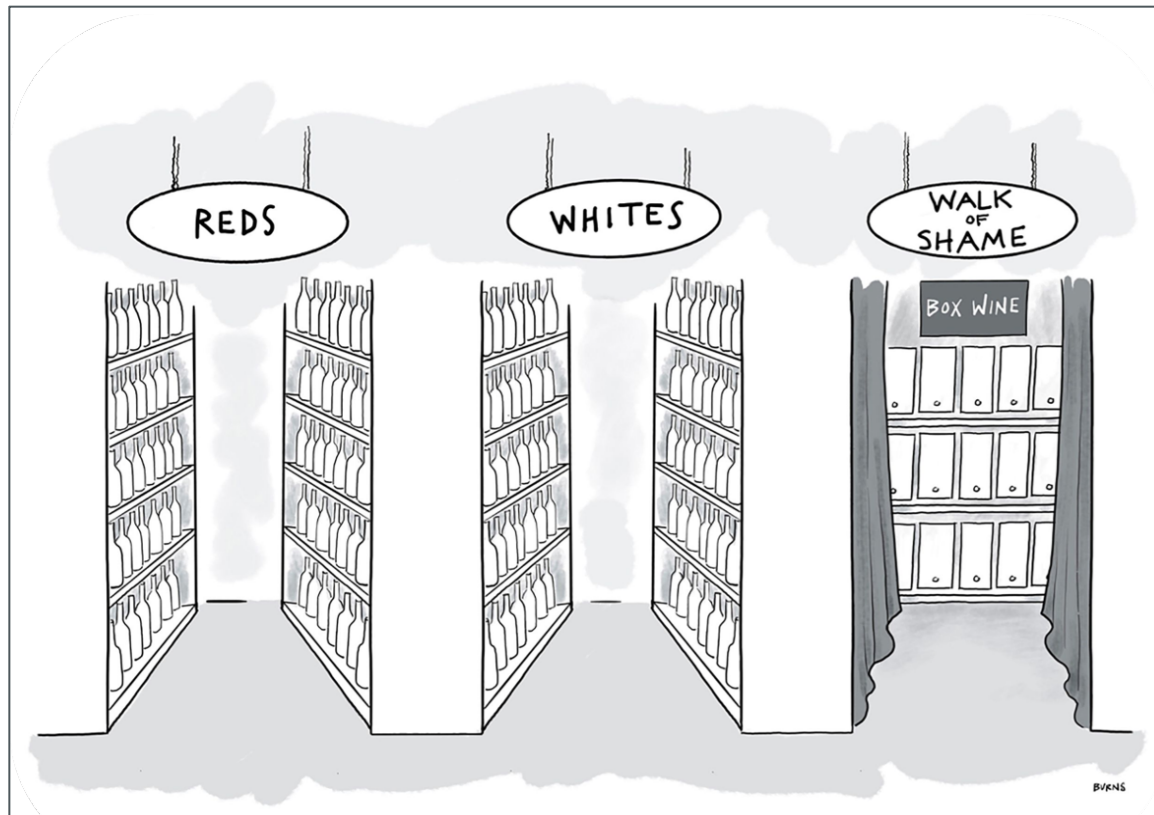
Figure 5.2: Q3 Scoring Detail-Perceived Share of GHG Emissions



The New York Times

*Your Recycling Gets Recycled, Right?  
Maybe, or Maybe Not*

# 3.PERCEPTION



OREGON WINE



SYMPOSIUM

February 3 & 4, 2025

# Building a Reuse Ecosystem

Adam Rack, Co-Founder,  
Revino

PROGRAM  
PRODUCER **oregon**  
wine BOARD

TRADE SHOW  
PRODUCER



Oregon  
Winegrowers  
ASSOCIATION EST 1981



# Status Quo

- Reuse Rates
  - Local ~ 0%
  - 69% of glass landfilled.
- De-Facto 'Standardization' over last decade.
  - 'Eco' 467 g bottles
  - Ecova Sparkling
  - NZ (90% of market in one design).
- Rapid Global Shift to Reuse
  - EU - 30% target (Excludes Wine)
  - France - 10% by 2027

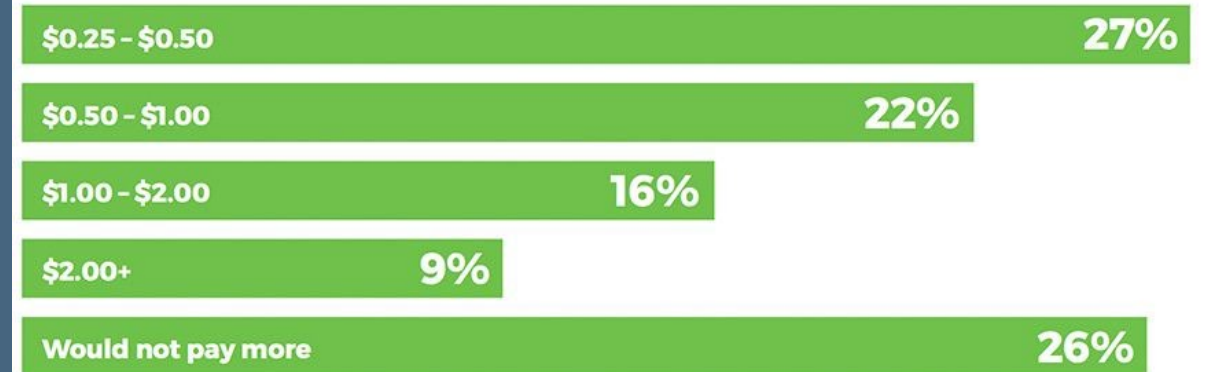


# Evolving Consumer Demands

## US Consumer Data on Reuse & Sustainable Packaging

- 82% - Now willing to pay *more*. Up 8% from 2020. Trivium (2023)
- 74% - Interested in buying products in refillable packaging, Trivium (2022)
- 12% - Premium commanded for 'sustainable' goods. Eunomia (2020)

Willingness to pay was consistent across all income categories, but how much more consumers are willing to pay correlates positively with income.



Based on a \$10.00 product.

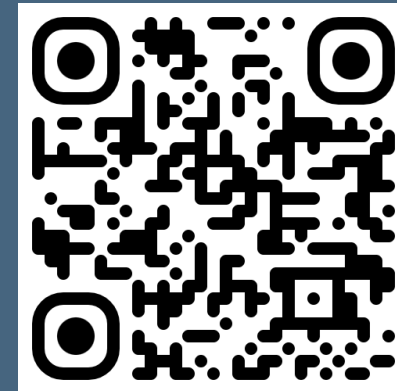
Buying Green Report, 2020, Boston Consulting Group, Trivium Packaging



OREGON WINE  
SYMPOSIUM  
PORTLAND

# Revino Today

- 49 brands in-bottle. 80+ committed.
- Many releases & bottlings slated for 2025.
- Cork, Burgundy in AG & Flint.
- 60+ Return locations.
- 2x Distribution Return Partners
- Planning: Retail Programming, Bordeaux Design, Operational Updates



Contact:  
[adam@revinobottles.com](mailto:adam@revinobottles.com)



Saving the planet, *one bottle at a time!*

Step 1 Buy wine in reusable bottles.



Enjoy! Step 2

Step 3 Return bottle to store for reuse!



SCAN FOR MORE INFORMATION

REVINO

OREGON WINE



SYMPOSIUM

February 3 & 4, 2025

# Reception in the Marketplace

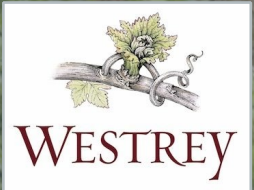
Amy Wesselman, Westrey Wine Company

PROGRAM  
PRODUCER **oregon**  
wine BOARD

TRADE SHOW  
PRODUCER



Oregon  
Winegrowers  
ASSOCIATION EST 1981



# Eric Asimov, Writer, *The New York Times*



“The single biggest element of the wine industry's carbon footprint is the manufacture and shipping of single-use glass bottles. They are convenient, and we've become accustomed to the ease of tossing them. But single-use bottles make no sense for the future of our planet, not for most wines, for soft drinks, or for almost anything else. Many wines, especially those intended for immediate or early consumption, could easily be packaged in alternative containers that would be far less costly to the environment. For wines that would benefit from aging, bottles are the perfect containers. But they do not have to be used one time and thrown away. Humans used returnable, refillable bottles for many years, and we can do it again. It requires a small adjustment in our behavior, a modest increase in social responsibility, and a concerted effort on the part of manufacturers and the wine industry to make it as easy as possible for people to make the adjustment. But it can be done, and I'm certain that, if we value our way of living, we will do it.”

# Early Market Releases

- Among first bottlings and first released to market in Revino bottles.
- 2021 Willamette Valley, Carlton Hill Vineyard, and “Nadja”
- Market visits in eight states since April 2024.



# Pascaline Lepeltier,

Master Sommalier, Writer,  
Partner - Racines NY, Chambers

*“I actively seek out producers with a commitment to reducing their carbon footprint. Whether it’s tetra pack or refillable glass, my clientele is embracing innovative packaging.”*



Credit: Cedric Angeles

*“With glass making up nearly 50% of the carbon footprint of a bottle of wine, we clearly need to seek alternatives. But none of the alternatives can offer the safety and performance of glass, especially over the long term. Cans and bags degrade quickly, releasing chemical compounds into the wine. Reusable bottles, on the other hand, offer the performance to age wine for decades. At the same time, they offer the maximum environmental benefits for wines that are consumed quickly.*”

## Jason Lett

Proprietor/Winemaker  
The Eyrie Vineyards

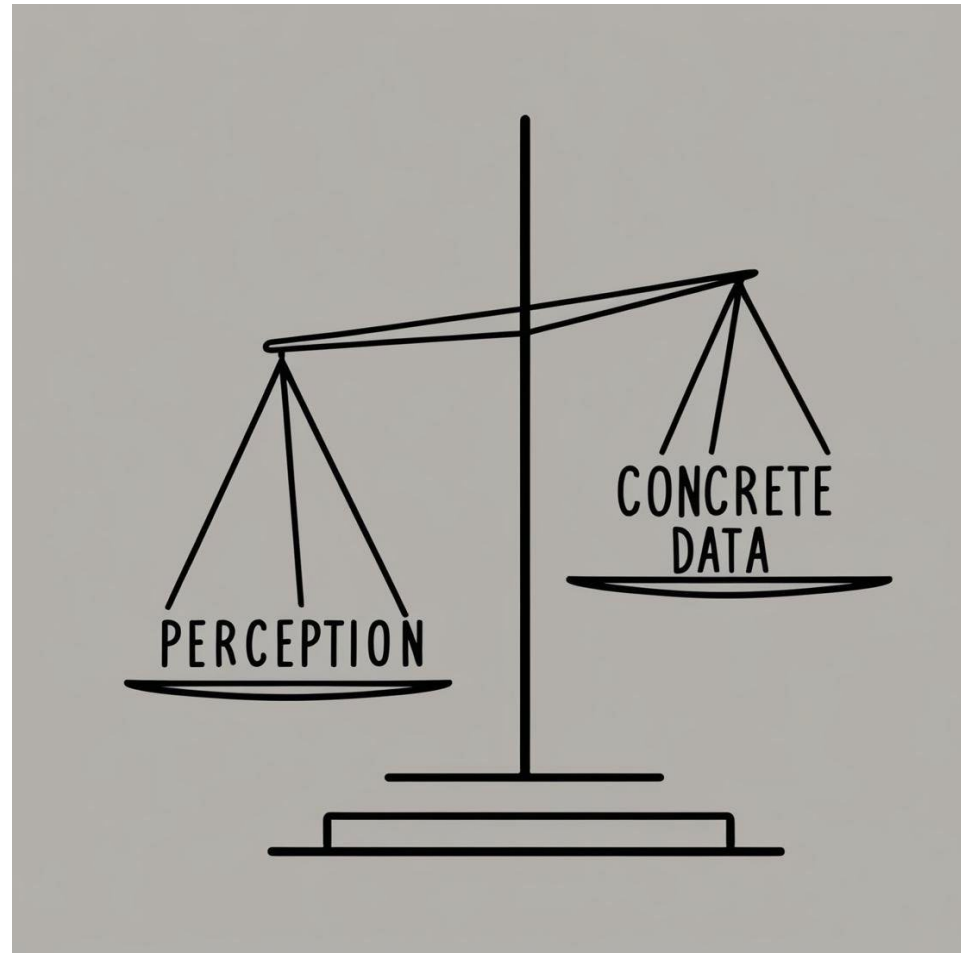


Credit: The Eyrie

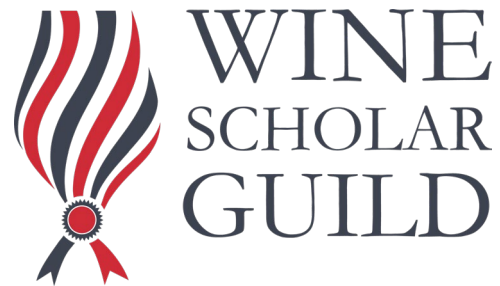


OREGON WINE  
SYMPOSIUM  
PORTLAND

# WHAT CAN WE ACTUALLY DO TO CHANGE PERCEPTION AND INITIATE MEANINGFUL CHANGE?



# 1. ADVOCACY AND EDUCATION



**WSET**  
WINE & SPIRIT  
EDUCATION TRUST



## 2. AUTHENTIC ACCREDITATION



# 3. CATER TO A NEW AUDIENCE

## THE CONSUMER FOR WINE IS CHANGING

According to the Silicon Valley Bank State of the US Wine Industry 2023 “[B]oomers are being replaced by younger buyers at a clip of 10,000 per day, each of those replacements possessing different tastes, values and desires than the older cohorts” “. . .[c]onsumers younger than 60 are less interested in buying wine today than they were in 2007”



"Younger generations are increasingly supporting eco-friendly vineyards and ethical production practices. They value tangible sustainability efforts and are critical of superficial "greenwashing."

"Younger consumers favor brands that showcase authenticity and individuality. They engage with brands on social platforms and prefer genuine, relatable content over highly produced advertisements"

ONCE IT'S  
IN THE  
GLASS DOES  
IT REALLY  
MATTER?



# Reuse in Policy, Market Engagement

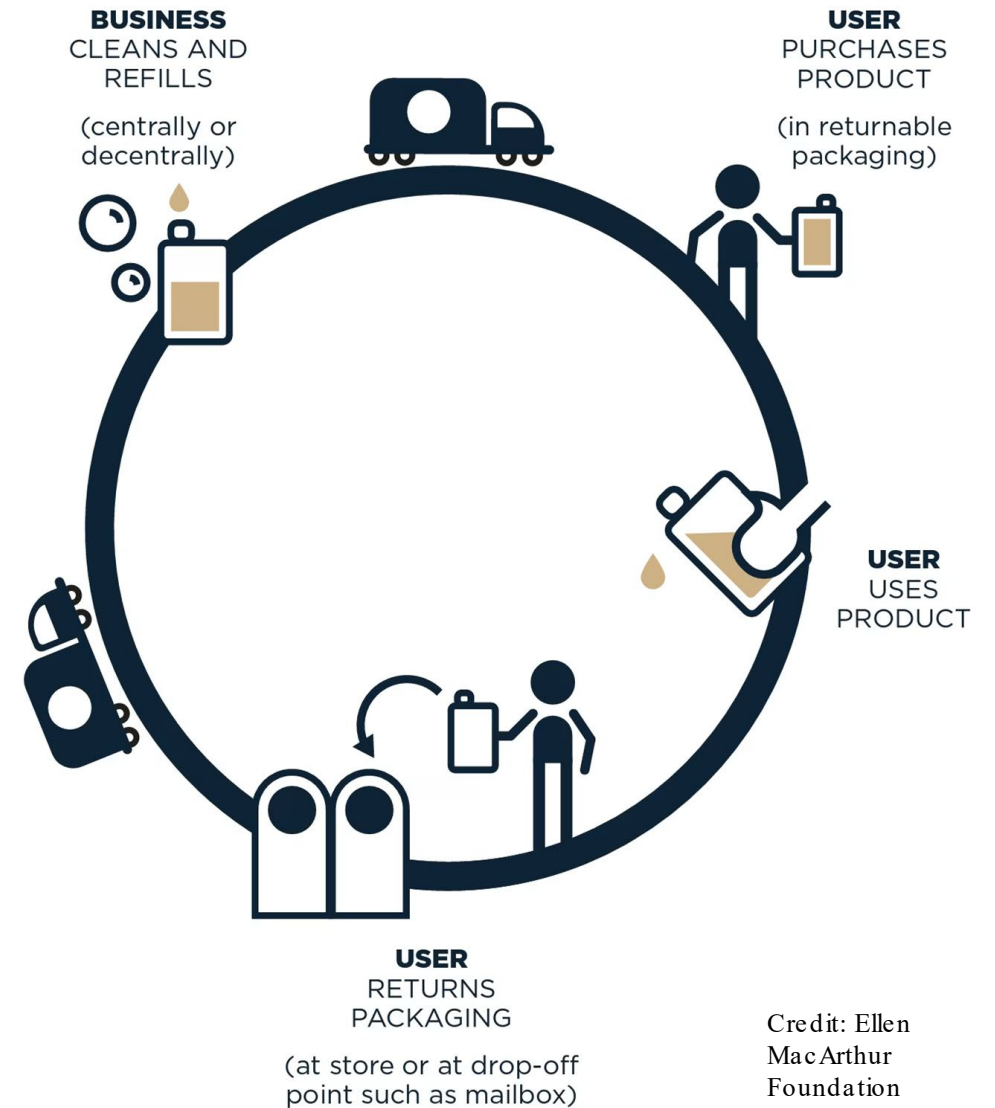
- 2017-2020
  - DEQ Wine Impact Report, WA Glass Report
  - First 'modern' efforts at reuse for OR wines.
    - Coopers Hall, Pierce Wines
- Policy Approach
  - "Extended Producer Responsibility (EPR)
  - Reuse Policy - OR, ME, CA, CO, WA
  - Governments, Advocacy, Industry Groups
- Retailer Interest
  - Small Shops - Ideal locations.
  - Large - Target, Ikea, New Seasons, Walmart



# Path Forward

## -A Managed Pool Model

- Improved efficiency -
  - Standard (“pool”) packaging - used, identified and returned by all system participants.
  - Drives down costs.
- Higher ‘benefits’.
  - Equitable access.
  - Lower individual risks.
  - Stabilizing effect on supply chain.
  - Unrivalled marketing opportunity for early adopters.
- *Only* realistic possibility of scaling within short time frame.\*



Credit: Ellen  
MacArthur  
Foundation

**REVINO**



OREGON WINE  
SYMPOSIUM  
PORTLAND

# Uniquely Positioned for Reuse

- Our Industry superpowers.
  - Storytelling
  - Influence
- Cost effective vs. disposable
  - Reuse of wine bottles offers lower system costs vs. one-time use.
- Limited changes to infrastructure.
  - No/little new equipment
  - Low operational impact.

a  
good  
company

**When things aren't  
sustainable,  
they eventually  
have to stop.**

- Anders Ankarlid



OREGON WINE  
SYMPOSIUM  
PORTLAND



## Global Momentum for Reuse

- ‘Reuse Ready’ Campaign
- International Collaborative Network
  - Dozens of Reuse Companies, Brands, Collective Efforts
  - Shared Knowledge
- Unpacking Wine Guide
- ...more coming this year.

### 1.2 Reusable GLASS BOTTLE

Remember when milk bottles were returned for reuse? The wine industry is adopting a similar approach to reduce energy-intensive production, single-use and (just) recycling. With the right infrastructure and consumer support, this shift could greatly enhance the sustainability of wine packaging.

#### COMPOSITION AND CHARACTERISTICS

Reusable glass bottles are made from the same materials as single-use glass. They can withstand multiple washing and sterilization cycles, lasting at least 20 uses. Glass <https://www.portoprotocol.com/reuse-ready-campaign/> reusable, though, in some reuse schemes, bottles are specifically certified for this purpose.

#### ENVIRONMENTAL BENEFITS

- Reusing bottles 20 times can reduce carbon emissions by up to 80% compared to single-use alternatives. [5]
- Reuse cuts raw material use by 99% and reduces energy and water consumption by 60%. [5]

#### ENVIRONMENTAL CHALLENGES

- Effective reuse systems rely on local infrastructure and logistics.
- Consumer participation is critical—bottles must be returned to achieve the environmental benefits.

Click in the image to learn more about the Reuse Ready Campaign



# Unpacking Wine Guide

CASE STUDY

## *Reusable Glass Bottle* REVINO

### BENEFITS:

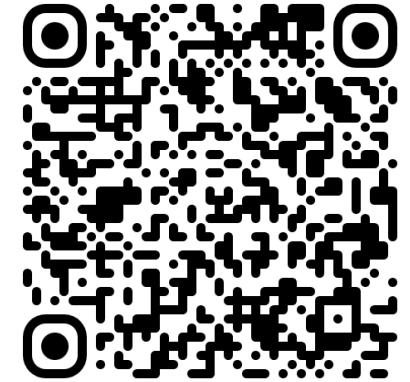
- A reusable bottle design shows consumers that the winery cares about sustainability.
- If collections are unavailable in end markets, we encourage our brands to provide resources on how consumers can support other types of reuse locally (coffee cups, food containers, ect.,) and how to find glass recycling locations near them. Only 31% of glass is recycled in the US.
- The bottles are 'eco' weight for the US market at 495 g yet durable enough for reuse. This is lighter than many 'premium' weight bottles while maintaining a 'premium' feel and look and offering sustainability benefits.
- By using a distinctive design, bottling operators can trust that glass is uniform and will not cause issues on high-speed bottling lines.

### CHALLENGES:

- Wider adoption of reusable bottles is needed to bring collection services to other markets beyond concentrated wine regions and population centers due to the long transport distances in the US.
- Some wineries hesitate to use a shared bottle design. This is a new visual design in a slow-moving industry.
- Reusable bottles must be made to a very high standard to ensure they last.
- Rebuilding a reuse economy requires collaboration with a constant focus on the future opportunity for the industry.

"We had plenty to learn from failed attempts at reuse in the recent past. Due to incredible pressure to lightweight glass, connect with younger generation of consumers and 'Race to Zero' emissions, we believe now is the time for a paradigm shift in the 'generic' bottle market. The Revino team knew the support of the glass industry was integral to a viable long-term reuse system and found a strong manufacturing partner in O-I Glass. From the initial stages of development, Revino asked for feedback and 'buy-in' of Oregon's wine industry, developing a bottle design that wineries felt confident using, that could be sourced domestically and reused in a strong local supply chain. Over 75 wineries, primarily from the Pacific Northwest, participated in the design process to ensure interest and adoption from the time of bottle design. Local bottle deposit return system (DRS) operators provided feedback to ensure compatibility with AI based optical sorting equipment should collections expand to DRS systems using this type of processing equipment."

Adam Rack / Revino



# Unpacking Wine Guide

## About Bag-in-Box FROM OUR COMMUNITY

### BENEFITS:

- Lowest carbon footprint compared with other single-use packaging types for wine by a mile.
- The potential for instant impact and cost reductions as switching to Bib does not require infrastructural changes as in the case with reuse schemes (bottles and kegs).
- Ancillary benefits, which include longer shelf life, better quality for less money due to its efficiencies, minimal waste for everyday wines that are not sparkling and do not benefit from long(er) term aging, and protection from glass and other dry goods shortages.

### CHALLENGES:

- Negative perception of the Bib format: It is typically associated with cheap wine of lesser quality and lacks the cache of glass.
- Negative perception of plastic: The Bib format is often perceived as 'bad' for the environment because its liner is made of plastic.
- Misperception that glass is actually recycled in the US, that recycling is the most important factor when it comes to evaluating environmental credentials and an overall misunderstanding of what behaviors are truly beneficial for the environment. The biggest challenge, hands down, is the "throw-away" mindset of the modern world. We dispose of packaging without thinking about where it will go. Changing this behavior and shifting to reusability is a massive challenge as it requires a giant shift in behavior.

"BiB is the packaging type for wine with the lowest carbon footprint and significantly less waste than other packaging types for wine. One 3L Bib is the equivalent of four 750ml bottles. The Bib is lightweight, 75% recycled cardboard and a single plastic liner. Bib is ideal for wines to be consumed within a year. The majority of wine is consumed on the same day it is purchased."

Melissa Saunders / Communal Brands



# Contact



**Melissa Saunders**

[melissa@communalbrands.com](mailto:melissa@communalbrands.com)  
+1 646 468 0680

[wine-queen.com](http://wine-queen.com)  
[communalbrands.com](http://communalbrands.com)

Instagram - @communalbrands



**Amy Wesselman**

[amy@westrey.com](mailto:amy@westrey.com)



**Adam Rack**

[adam@revinobottles.com](mailto:adam@revinobottles.com)  
+1 503 389 0502

[revinobottles.com](http://revinobottles.com)  
Instagram - @revinobottles



**Herb Quady**

[hquady@quadynorth.com](mailto:hquady@quadynorth.com)

**LIVE Certified**

[livecertified.org](http://livecertified.org)

