

A photograph of a vineyard with green and yellowing leaves, backlit by a bright sun. The year '2023' is written in large, white, sans-serif font across the center of the image.

2023

ANNUAL REPORT

Driving collective action to
decarbonize the global wine sector



INTERNATIONAL
WINERIES FOR
CLIMATE ACTION



November
2023

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Background photo: Familia Torres (Spain)
Cover photo: Cakebread Cellars (California, USA)

Foreword

by the IWCA Board of Directors

Miguel A. Torres

Co-Founder
Fourth Generation
and President,
Familia Torres

Katie Jackson

Co-Founder
2nd Generation Proprietor
and Senior Vice President of
Corporate Social Responsibility,
Jackson Family Wines

Adrian Chitty

Sustainability, A to Z Wineworks,
Ste Michelle Wine Estates

Beth Weber Novak

Second Generation and President
and CEO, Spottswoode Estate
Vineyard & Winery

Josep Maria Ribas Portella

Climate Change and Sustainability
Director, Familia Torres

Julien Gervreau

Director, ESG and Sustainability
Services, Sensiba LLP

Mafalda Guedes

Head of Corporate Communications
and Sustainability, Sogrape

Michael Wentworth

General Manager, Sustainability and
Strategic Projects, Yealands Estate
Wines



The launch signing of IWCA in February 2019 in Barcelona, Spain, with Miguel A. Torres, fourth generation and President at Familia Torres, and Katie Jackson, second-generation proprietor and Senior Vice President of Corporate Social Responsibility at Jackson Family Wines.

With COP28 in Dubai just weeks away, we're hearing a lot of talk: about the need to recognize the devastation caused by climate change, about the need for various actors to step up and commit to action, about how we're falling behind and it's all too little, too late.

We certainly have plenty we could add to these conversations — ever more so as wineries. Again and again this year, we experienced the consequences of climate change on our entire *raison d'être*. As agricultural businesses, we are dependent on delicate soil, water, air, temperature, and other climatic and geographic factors. The real need to tackle the climate crisis for the survival of the wine industry is why International Wineries

for Climate Action (IWCA) was founded in 2019.

But climate action isn't just about making a commitment. It's about setting ambitious, concrete targets for change — and meeting them. As we reflect on the past year at IWCA, that is what we're most proud of.

Our coalition is now 45 wine companies strong across 11 countries and five continents. Each of these companies has set the ambitious goal of reaching Net Zero by 2050, and they are concretely leading the charge towards this goal. They are regularly measuring their GHG emissions, mobilizing their teams to instill a culture of sustainability across their business units, investing in renewable energy, installing

new equipment and infrastructure, shifting their agricultural and business practices to reduce their carbon footprint, and much more. You will gain a glimpse into how these climate champions are making a difference through this report.

Across our members' individual and collective efforts, IWCA has set a high bar for ambition, accountability, and transparency. The immense threat of climate change demands nothing less.

Over the past five years, IWCA has become the most rigorous standard for climate action in the wine sector. Wine producers, industry partners, media, and consumers have come to trust that IWCA represents tangible action and measurable results,

not just commitments. We have established a certification process that applies global science-based standards to the wine industry, standardizing GHG accounting methodologies in the wine sector for the first time. Our member wineries transparently report on their emissions reductions progress to IWCA, and we in turn publish this Annual Report to share their work and ours.

We're rolling up our sleeves to accelerate our movement in 2024. Despite sobering trends in global climate change, we remain hopeful for progress thanks to the collective efforts of our members and other inspiring champions. So to our friends, industry partners, and member wineries we say: thank you. We're looking forward to working with you in the year to come. ■

45 wine companies

have joined IWCA's global coalition for climate action in the wine sector.

Across our membership, we encompass:

 **139 wineries**

 **28,600 ha of vineyards**

 **525 million liters of annual wine production**

which represents 2% of total global wine production — progress we're proud of, while reminding us of the progress still to be achieved!



Number of hectares are self-reported by IWCA's member wine companies (40 respondents). Liters of wine produced is self-reported by Applicant Members and collected from Silver and Gold Members in their audited GHG inventories.

Total liters of global wine production as reported by OIV's *State of the World Vine and Wine Sector 2022*.

Voyager Estate (Australia)

About IWCA

As wineries, we are all too familiar with the existential threat that climate change poses to the future of our businesses. It's why we've galvanized a winery-driven movement for climate action.

IWCA is a non-profit membership-driven organization of wine companies spanning 11 countries and five continents — and counting. Our members are all committed to the same goal: reaching Net Zero by 2050, while meeting intermediate emissions reduction targets by 2030. They must meet IWCA's rigorous, science-based standards for GHG emissions accounting and emissions reduction targets to be certified at IWCA's Applicant, Silver, and Gold membership levels.

Beyond providing structured milestones and official certification in the journey towards Net Zero, IWCA facilitates a collaborative community for our members. We offer tools and guidance, accelerate learning among peers and with outside experts on climate action strategies, and champion the voices of wineries as leaders for climate action.

Our Priorities

- **RAISING AWARENESS**
of the urgent need to reduce GHG emissions to mitigate the effects of climate change
- **SETTING A HIGH BAR**
for standardized, transparent, accountable GHG emissions measurement and reduction in the wine sector.
- **SHARING STRATEGIES AND BEST PRACTICES**
ground-truthed by wineries to help wine producers and their partners accelerate solutions
- **ESTABLISHING RIGOROUS METHODOLOGIES**
for wineries to measure their emissions across their value chains following consistent, science-based standards

We are proud to support and engage with other collaborative efforts that share a similar mission to tackle climate change.



Race to Zero Campaign

The Race to Zero Campaign is the largest-ever multi-sectoral alliance committed to achieving Net Zero carbon emissions by 2050 at the latest.

IWCA joined the campaign in 2021 — becoming the first Race to Zero Partner from the wine and agricultural industries. Since then, we have served as the leading Net Zero initiative championing and facilitating wine producers to become climate positive.

Through membership in IWCA, the majority of our own members have also become Race to Zero members, joining over 10,000 other private and public entities in the mission towards decarbonization. IWCA's participating Silver and Gold Members publicly report on their progress towards Net Zero goals annually through this report.



Sustainable Wine Roundtable

We are a proud founding member of the Sustainable Wine Roundtable (SWR), a global, independent, non-profit, multistakeholder roundtable to accelerate action as sustainability challenges mount in the production and marketing of wine.

Ridge Vineyards
(California, USA)



International Wineries for Climate Action is Race to Zero's first partner representing the wine and agriculture sector. The progress they have made to reduce greenhouse gas emissions, encourage regenerative practices, and inform their 45+ wine producing companies globally of best practice is quite remarkable. We look forward to continuing working with this important sector on their climate action.



H.E. Razan Al Mubarak

United Nations Climate Change High-Level Champion, and President of International Union for Conservation of Nature (2021-2025)



Cullen Wines (West Australia)

From commitment...

Our collective efforts at IWCA are driven by one core mission: to decarbonize the wine sector. It's a mission in service of the future of our businesses and our planet.

“ Challenges on a scale hard to imagine.

"The climate emergency we are now facing is the challenge of our time. Without urgent action to curtail greenhouse gas emissions, we — as a business, as a community, and as a society — face challenges on a scale hard to imagine.

While historically, the Okanagan Valley in British Columbia could be viewed as a cool climate region, it is hard now to classify it that way. In the summer of 2021, we achieved temperatures of 50°C in our vineyards; six months later our vineyards saw extremely cool temperatures dropping as low as -25°C. These new and dramatic temperatures are leading to smaller crops and challenges in vine health and wine balance. On top of that, we are seeing shifting pest pressures, with some insect pests migrating from three to five generations in a single season, exponentially increasing populations. To add to these challenges, we have experienced four of the most destructive wildfire seasons on record over the past seven years.

As an agricultural business producing a luxury good, we have an obligation to inform ourselves of the impact we are causing, and a responsibility to future generations to work towards a carbon-neutral or -negative future."



Taylor Whelan
Winemaker & Director, Sustainability
CedarCreek Estate Winery (Canada)
IWCA Applicant Member

“ The urgency is undeniable.

"At VSPT Wine Group, we recognize that climate change is today the most significant threat to the wine industry, challenging us to be more resilient than ever.

Our greatest concern as climate change accelerates is water scarcity. And the urgency is undeniable: it's something we are already grappling with.

As rainfall patterns have been changing over the past decade — from long periods of drought to intense precipitation in short periods — the soil has been unable to properly absorb water.

We've had to rethink our water management approaches to tackle this enormous challenge.

As one example, we have integrated technical irrigation systems across 95% of our vineyards and increased our water storage capacity to ensure availability during critical months, thus diminishing stress in the basins. Since irrigation requires additional electric energy, we have also invested in solar panels in all of our vineyards to supply green power, ensuring we're avoiding any negative climate impact from the increased demand."



Carolina Gotuzzo Bickell
Director of Corporate Affairs and Sustainability
VSPT Wine Group (Chile)
IWCA Gold Member



VSPT Wine Group (Chile)

...to mobilization

**Awareness of the problem is one thing.
Turning commitment into action is another.**

That comes down to people.

From the beginning, IWCA has been more than a certification: we are a community of learning and collaboration among people effecting change within their wineries. Some of these people are viticulture specialists; others are business managers; others are marketing professionals; others are sustainability officers. Our community is unique because of this diversity of perspective that our members contribute, yet all in service of the same Net Zero goals.

In turn, within their wineries, IWCA members are similarly mobilizing diverse teams, working to embed a culture of sustainability across everything they do.



Crimson Wine Group (Oregon, USA)

Says Nicolas Quillé, MW, Chief Winemaking and Operations Officer of IWCA Member winery **Crimson Wine Group** of California, USA:



"The IWCA framework has greatly helped us 'get on the horse.' This has been transformational for our organization."

The winery created a 25-person carbon council (equivalent to about 15% of Crimson's full-time workforce) comprised of staff that volunteered from across departments. Explains Nicolas Quillé, Chief Winemaking and Operations Officer: "It's a formal council, governed by its own charter, with an elected executive committee. This structure has enabled us to **reach all corners of the company** and given our council members the opportunity to take leadership positions."

The council's, and company's, climate action efforts have been organized by three sub-committees:

- **Measurements**, which orchestrates the GHG inventory and audit process and works to refine the company's emissions accounting process (chaired by one of Crimson's winemakers)
- **Solutions**, which updates Crimson's Race to Zero strategy, proposes actionable solutions, calendarizes efforts, and mobilizes budgets (chaired by the winery's logistics manager)
- **Communications**, which communicates the winery's efforts both internally with staff and externally with stakeholders (chaired by Crimson's senior director of commercial strategies)

...to action

Comprehensive, regular GHG emissions accounting is foundational to tangible climate action.

By understanding the unique emissions "hotspots" within their value chain, a company can devise a concrete roadmap for action — and continuously refine and identify action areas over time with new data.

To become an IWCA member, wineries must conduct **annual** (or bi-annual, for smaller wineries), **third-party audited** GHG emissions inventories across Scopes 1, 2, and 3, following IWCA's **standardized protocol** aligned with World Resources Institute (WRI) GHG Protocol and ISO-14064 standards.

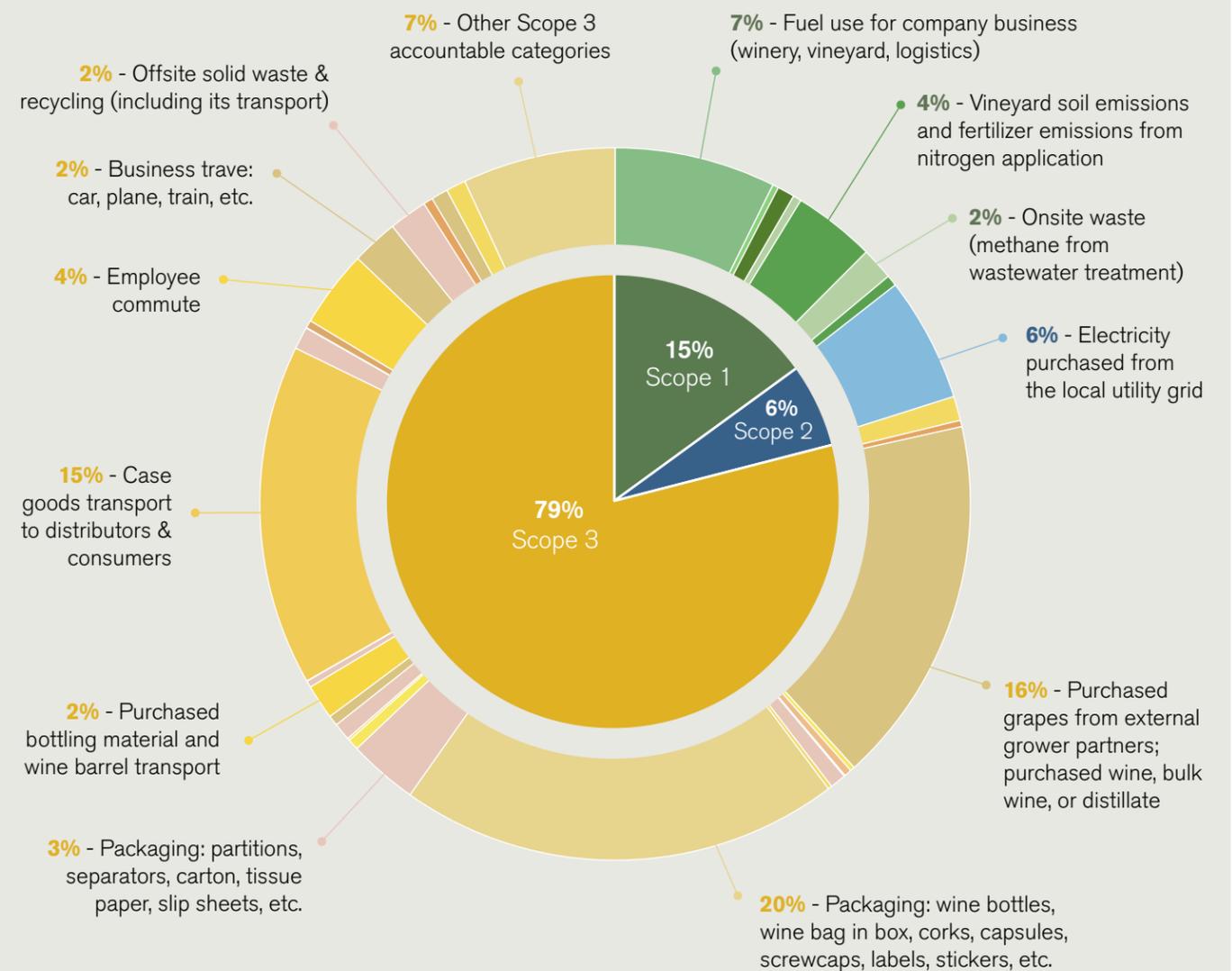
- **SCOPE 1** ▪ Direct emissions from activities under a company's control
- **SCOPE 2** ▪ Indirect emissions related to a company's purchase of electricity, steam, heat, or cooling
- **SCOPE 3** ▪ Indirect emissions derived from the company's activity across its value chain



Jackson Family Wines (California, USA)

What do the data tell us about carbon emissions in the wine value chain?

We crunched the **Scope 1**, **Scope 2**, and **Scope 3** emissions numbers across our membership to understand the sources of emissions across the wine value chain. The averages displayed here are calculated from 34 IWCA member wineries' **baseline** GHG inventory data, which have been third-party audited and adhere to ISO-14064 standards.



Activities representing less than 2% of total emissions have not been labeled. See all emissions categories that must be accounted for by IWCA Members' inventories [here](#). Scope 2 data include a mix of location-based and market-based emissions.

...to impact.

"Climate action" shouldn't be an abstract, greenwashed term. And for IWCA wineries, it's not. It means results.

Here's how a few IWCA wineries have tackled the "Top 5" GHG hotspots — activities which, combined, account for 64% of total emissions across the wine value chain (per our average calculations).

Fuel use for company business

Symington Family Estates (Portugal),
IWCA Silver Member

7.3%

of total emissions
in the wine value
chain, on average



"This category includes emissions from fuel used by owned or managed vehicles, industrial equipment, and agricultural machinery. The fuel consumption of our vehicles — whether owned or managed by us — accounts for 40% of our Scope 1 emissions.

In 2019, we committed to transitioning to electric vehicles, with the goal that all new cars purchased will be at least plug-in by 2025. **In 2022, 17% of our fleet was comprised of fully electric or hybrid vehicles, resulting in a CO₂e reduction of 9 tons that year.**

We have also installed 20 charging stations, 16 at Gaia's headquarters and bottling facilities, and four at our main 'quintas' in the Douro Valley. An additional 10 stations will be installed soon to improve charging infrastructure at our Douro sites, which currently lack of public charging options.

At the same time, we are in the process of comprehensively updating our fleet policy, which includes our carpooling procedure. This process will review and clarify the procurement criteria and extend the policy to consider additional maintenance and carbon performance indicators. The new fleet policy will be communicated to our fleet suppliers to involve them in our commitment to low impact mobility."

Case goods transport to distributors and consumers

Felton Road (New Zealand),
IWCA Silver Member

14.5%

of total emissions
in the wine value
chain, on average



"Felton Road is located in a remote part of a remote country, so distance to customer will always be a factor, and our export program will always be the dominant part of our sales. This has proved to be the most significant challenge for GHG reductions in our IWCA journey to date.

As soon as we started calculating our emissions, we realized the carbon we squandered on delivery. We switched our direct-to-consumer (DTC) shipping to Australia from airbourne to sea freight. Representing less than 10% of annual shipments, this distribution channel was responsible for 44 tons of CO₂e, the equivalent of 14% of our baseline emissions year. **One meeting with our (very receptive) export courier and that 44 ton liability was reduced to 0.5 tons.**

And once we fully did calculations on how emissions-intensive air freight is — 100 times more than ocean freight — all cases were grounded, effective immediately. We found an analogous solution for DTC in the US, and **by moving those 98 cases to ocean freight, we saved a further 22 tons: as much as we saved in electrifying our entire company road fleet.**

The change in route-to-market has radically increased transit times. Many of our most loyal customers have been buying direct from us for over twenty years, so careful explanation was warranted. Feedback on our decision has been near universally positive, especially once concerns of shipping temperature were allayed. We dispatch in winter to Australia, making the most of the cooler seasons and use reefers or VinLiners for all trans-equatorial shipments."



Felton Road (New Zealand)



“ This has already saved literal tons in carbon emissions.

Ridge Vineyards (California, USA)

Wine bottles and packaging materials (boxes, corks, capsules, screwcaps, labels, stickers, etc.)

Ridge Vineyards (California, USA), IWCA Silver Member



20.0%

of total emissions in the wine value chain, on average

"As part of our involvement in IWCA, we have been diligently working to reduce our emissions from packaging.

Fine wines have always been packaged in glass, but that doesn't mean it needs to be irresponsible. At Ridge Vineyards, we are already using one of the lightest glass bottle options on the market at 550 grams, which is the global average. We're currently testing an even lighter glass bottle at 454 grams that is produced in the United States. **This transition has already saved literal tons in carbon emissions, from glass production to shipping**, and we're continuing to look at even lighter weight options.

We've also been testing out reusable kegs for a portion of our Three Valleys blend, a drink-now style poured by the glass at top restaurants around the world. Each keg is the equivalent of 26 bottles, and over the course of a year, **this is eliminating the use of more than 10,000 glass bottles, corks, and packaging materials.**

In terms of shipping materials, we are switching to a new box made from **100% recycled paper, water-based ink, and green cell foam packing materials** made from corn that dissolves in water. We also transitioned our warehouse shipment packaging (the padding material inside each shipment box) to be our own recycled case boxes as opposed to bubble wrap or other pre-purchased materials."

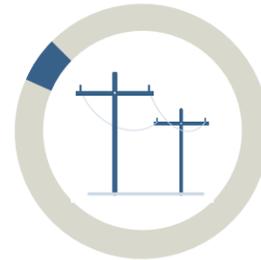


Electricity purchased from local utility grid

Herència Altés (Spain),
IWCA Silver Member

5.6%

of total emissions
in the wine value
chain, on average



"We built the Herència Altés winery in 2016 on beautiful, historic, but remote grounds in Terra Alta, Spain. Obtaining a high-voltage grid connection from Spain's energy companies was going to come at an astronomical cost, which was what first pushed us to look into solar energy.

We set up 35 kilowatts of solar panel capacity plus 100 kilowatts of battery storage. As we got the business up and running, we realized we were underpowered and had to supplement with a diesel-run generator. After around three years of trial and error, we revamped our entire system. **We doubled our solar panel capacity to 70 kilowatts and replaced our batteries to the latest**

technology, substantially increasing performance. And we're already seeing the results in the data: our use of the diesel-run generator has plummeted. **Today, we run on about 75% solar energy and 25% from the generator.** Our goal is to achieve 95% from solar.

I'm convinced we have amortized our investments several times over compared to the cost of purchasing power from the grid. **Our Scope 2 emissions are zero.** Renewable energy makes sense economically, it makes sense ethically, and it even makes sense for our marketing and value add for our customers."

Purchased grapes from external grower partners

Champagne Lanson (France),
IWCA Applicant Member

16.7%

of total emissions
in the wine value
chain, on average



"Maison Lanson supports our partner growers in their transition towards sustainable viticulture, which links to our efforts to reduce our Scope 3 emissions. In 2018, we founded the first collective structure by a Champagne house: we work with more than 400 growers to help them

reach Viticulture Durable en Champagne (Sustainable Viticulture in Champagne) and Haute Valeur Environnementale (High Environmental Value) certifications, which focus on organic practices, biodiversity protection, and GHG emissions reductions."



Our Scope 2 emissions are zero.



Herència Altés (Spain)

IWCA wineries annually collectively produce

34 million kWh

of onsite renewable energy

avoiding CO₂ emissions equivalent to



10.3 million

liters of gasoline
consumed



3,047 homes'

energy use for one
year in the U.S.

The sum of renewable energy produced was calculated with data self-reported by 41 IWCA wineries. Conversions calculated using the U.S. Environmental Protection Agency (EPA)'s [Green Power Equivalency Calculator](#) and [Greenhouse Gas Equivalencies Calculator](#).

Organizational Highlights



2023 and has been a year of growth and developing horizons for IWCA.

Our activities have expanded as we strive to facilitate exchanges and sharing within our global collective of like-minded wineries. Being a member of IWCA is not just about calculating and reducing your emissions: it is about being part of a global network of top-quality wine producers who want to build relationships with other leaders, improve their efforts to lower their emissions, and help spread the word about why climate action matters for the future of our sector.

The next year will be about continued growth and advocacy at national and international levels. As we continue to build our membership, we are also eager to work with partners who share a similar vision — including major retailers, media, and industry institutions — as we work to become the global benchmark for decarbonization in the wine industry.



Charlotte Hey
IWCA Executive Director

Strengthening our Movement

A Growing Coalition of Wineries

Since our founding, we have been a winery-driven movement. We are proud that our membership has substantially grown in 2023: IWCA is now **45 wine companies** strong, up from 37 one year ago. Roughly one-third produce under 50,000 cases annually; one-third between 50,000 and 500,000 cases; and one-third over 500,000 cases.

Our members represent **11 countries and five continents**, as we welcomed our first

members from Argentina and North Macedonia this year, adding to our wineries from Australia, Canada, Chile, France, India, Portugal, Spain, New Zealand, and the U.S.

In 2023, we celebrated **10 wineries who achieved Silver level** from Applicant level as well as **four wineries who reached Gold level** from Silver level: Spottswode Estate Vineyard & Winery (California, USA), Viñas Familia Gil (Spain), VSPT Wine Group (Chile), and Yealands Estate Wines (New Zealand). Our three-tiered membership structure is a hallmark of our approach to bold yet realistic and accountable emissions reduction — allowing wineries at any stage in their sustainability journey to join IWCA while providing structured milestones towards reaching Net Zero by 2050.

IWCA Membership Tiers



- **Applicant Members** have completed a baseline GHG emissions inventory (inclusive of at least Scopes 1 and 2) and/or have a verifiable plan to complete a baseline Scopes 1, 2, and 3 inventory within one year.
- They must complete and third-party audit a baseline Scopes 1, 2, and 3 inventory within one year of joining IWCA.

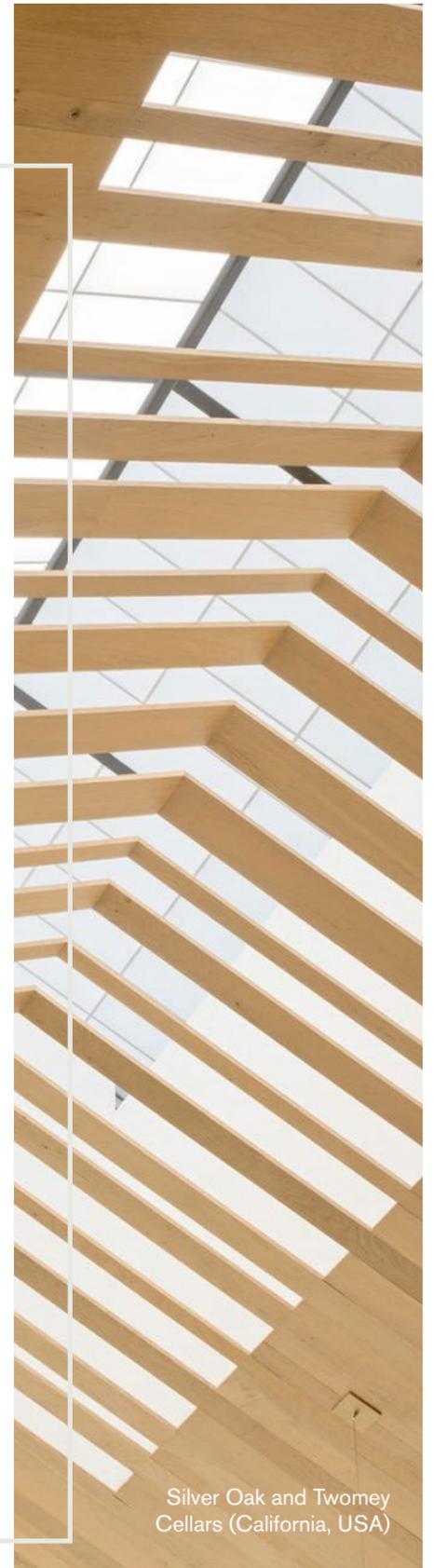


- **Silver Members** have completed a baseline, third-party verified GHG emissions inventory across Scopes 1, 2, and 3 following IWCA's protocols.
- The inventory has been verified by an ISO-14064-3 accredited or CDP-accredited auditor.
- Members must conduct audited inventories yearly or every other year (depending on company size).



- **Gold Members** must meet all Silver-level requirements.
- They self-generate onsite renewable energy equivalent to at least 20% of all energy that the company consumes.
- They demonstrate a consistent reduction of emissions (per liter of wine produced) over time, as compared to their baseline inventory and proportional towards their Net Zero target for 2050.

**Net Zero
by 2050**



Silver Oak and Twomey Cellars (California, USA)

Launching our Network of Supporters

IWCA is proud to be a movement powered by wineries, but we recognize we can't achieve our mission alone — which is why earlier this year, we launched a number of new ways for non-wineries to get involved.

Through our **Supporters** initiative, we offer a way for wine sector professionals and entities, suppliers, distributors, retailers, and other industry partners to get involved in our mission.

We welcomed **Asociación de Viticultura Regenerativa** and the **Regenerative Viticulture Foundation** as our first IWCA Champions. As mission-aligned entities, these organizations promote our shared climate action priorities and will collaborate with us on knowledge exchange and learning.

We were also thrilled to welcome **Karen MacNeil**, leading wine author and communicator, as our first Media Champion. She will donate 10% of the proceeds from corporate subscriptions of her digital wine newsletter "WineSpeed" to IWCA.



Karen MacNeil is one of the most influential wine educators, speakers, and authors who has spent her career helping consumers better understand, appreciate, and enjoy wine. Her voice and point of view will be impactful in moving us forward while also helping consumers and wine trade understand the work we're doing to decarbonize the global wine industry.



Katie Jackson
IWCA Founding Board Member
2nd Generation Proprietor and Senior Vice
President of Corporate Social Responsibility
Jackson Family Wines

Fostering a Community of Learning and Exchange

In addition to our trimestral membership-wide virtual meetings, we held three internal learning events this year. Each of these **"Knowledge Exchange Seminars"** featured two or three IWCA wineries with expertise on the topic at hand: in 2023, these sessions focused on biomass boilers, regenerative agriculture, and glass lightweighting. These events allowed for frank conversation around the benefits and challenges of solutions that have been tried and tested by wineries of all sizes.

We also hosted a number of external experts to speak to IWCA members, including for a discussion on the Race to Zero Campaign.

Engaging Retailers in Climate Action

IWCA is working hard to forge strong working relationships with leading retailers across the globe. As part of this effort, in September 2023 we co-organized a virtual educational session with Ahold Delhaize, one of the world's largest food and beverage retailers. Speaking to over 100 wine producers and suppliers, IWCA and Ahold Delhaize's international sustainability and buying teams spoke about the importance of calculating GHG emissions and devising a roadmap to reduce them.

As the wine industry's most respected and rigorous climate action certification, we were proud to collaborate with Ahold Delhaize — an influential industry leader amplifying sustainability as a core tenant of business. We look forward to further engaging retailers in the coming year as we recognize their essential role in driving an industry-wide shift.



Often I am asked what the biggest challenge the wine sector is facing, and my answer is always without any doubt: climate change. We must accelerate the decarbonization of our world economy and it is crucial that more action is taken, in all parts of the world, on every level, in every sector.



Miguel A. Torres
IWCA Founding Board Member
Fourth Generation and President
Familia Torres

Domaine Lafage (France)

Establishing a Gold Standard for Emissions Accounting in Wine

We continue to critically examine and refine our **GHG emissions accounting tools** (including our three GHG calculators for wineries in Australia, New Zealand, and the U.S.) and **certification process** to ensure we remain the most rigorous, trusted science-based standard in the wine industry.

This year, we made minor updates to our policy documents detailing our processes for joining IWCA and obtaining third-party verification. One major change we made was to expand the allowable list of auditors to include CDP-accredited firms, in addition to ISO-14064-accredited firms — a modification that still maintains rigor but eases the inventory verification process for wineries.

Our Standards & Protocols

IWCA has become the “gold standard” for climate action in the wine industry — a trusted seal backed by transparent emissions data reporting and science-based protocols.

→ Our membership targets are benchmarked to the **Intergovernmental Panel on Climate Change (IPCC) targets**, which call for emissions to reach Net Zero by 2050 and achieve intermediate targets by 2030 in order to limit global warming to no more than 1.5°C above pre-industrial levels.

→ IWCA members' GHG emissions inventories must encompass **Scopes 1, 2, and 3 emissions**; account for a standardized, sector-specific set of emissions categories; and be third-party audited by an ISO-14064 or CDP -accredited firm. Per our policies, wineries' reported emissions reductions must be based on their **own true and lasting efforts**. For example, members may not count carbon offset purchases towards their emissions reductions targets, and IWCA limits the extent to which purchased Renewable Energy Certificates can count toward emissions reductions.

→ IWCA's standards were informed by and align with (or exceed) recognized global standards, including:

- **World Resources Institute GHG Protocol.** Our inventory guidelines are aligned with the GHG Protocol, with the exception of two emissions categories for which IWCA's requirements exceed the GHG Protocol (accounting for refrigerant emissions and energy used to store and cool wine).
- **ISO-14064 standard.** IWCA's GHG guidance and GHG calculators fully adhere to this international standard for emissions quantification, reporting, and verification.
- **Science-Based Targets Initiative (SBTi).** Our protocols align with, and in many cases are more stringent than, the SBTi. For example, IWCA requires that inventories be third-party verified and that wineries must meet a minimum onsite renewable energy percentage to achieve Gold-level membership, both requirements that go above and beyond the SBTi.



A New Partnership to Understand the Potential of Soil Carbon Sequestration

At the end of 2023, IWCA and a consortium of partners (with the leadership of Jackson Family Wines and The Soil Inventory Project) secured a \$2 million grant from the U.S. Department of Agriculture as part of the Partnership for Climate-Smart Commodities program.

These grant funds will help wine industry partners — including many U.S.-based IWCA member wineries — introduce regenerative farming practices such as no and reduced till, compost spreading, livestock integration, and cover cropping into their viticultural practices. Funding is also available to help wineries measure the resulting soil carbon sequestration in their vineyards using standardized methods, and model and evaluate long-term benefits of climate-smart land management.

Over the past year, IWCA, as a lead collaborator, has:

- Solicited engagement from wineries across the U.S., helping them understand the benefits and requirements of participation and guiding them through the starting steps.
- Helped our partners scope the appropriate vineyard locations and regenerative practices to enroll in the grant.
- Connected our partners with relevant local technical assistance providers with expertise in climate-smart viticultural practices.

Formal enrollment in the grant program will be completed by the end of 2023, with participating wineries commencing practice adoption and baseline measurement in Spring 2024.

Building Awareness through Media & Events

FORTUNE

"How this board is bringing the international wine community together to fight climate change"

By Shana Clarke
17 July 2023



Decanter

"Miguel A. Torres urges more wineries to join the fight against climate change"

By Martin Green
26 June 2023



Jancis Robinson.com

Episode 3: "Climate change and wine"

Hosted by Elaine Chukan Brown on the JancisRobinson.com Podcast
2 January 2023



WINE BUSINESS

"USDA Climate Smart Ag Grant Funds Five Year, \$2 Million Soil Carbon Inventory Project for Fine Wine Producers"

By Pam Strayer
18 January 2023



NEW ZEALAND WINEGROWER

"Holistic approach to soil, land and climate"

By Sophie Preece
15 June 2023



the drinks business

"Climate change winery action group sees membership hit 40"

By Patrick Schmitt
3 April 2023



International Wineries for Climate Action is one group that I think is doing really good work, that [is] following the science-based targets approach. [...] I think they're trying to make tools and information that makes it easier for a lot more wineries to follow suit."

■ **Kimberly Nicholas**
Sustainability Scientist
Speaking on the JancisRobinson.com podcast



Alma Carraovejas (Spain)

Sustainable Wine Roundtable Global Conference Series

IWCA was featured on two panels with Julien Gervreau and Josep María Ribas Portella, members of our Board of Directors, sharing perspectives on how to get started measuring and reducing greenhouse gas emissions and strategies to reduce bottle weights, respectively.

Barcelona Wine Week

Miguel A. Torres, President of Familia Torres and co-founder of IWCA, showcased our winery-driven movement for climate action at an event on "Business collaboration towards decarbonization," and our Board Member Josep María Ribas Portella spoke on a panel about the emissions reduction potential of bottle reuse.

Innovi Wine Innovation Week

Núria Altés of our member Herència Altés was featured on a panel about ESG, during which she spotlighted IWCA's mission and membership opportunities.

ProWein

Many of our members attending the event spotlighted their climate action efforts, including IWCA, at their booths. We hosted our second "unofficial" in-person gathering with those present to toast IWCA and our collective impact.

NapaRISE

IWCA and our 10 California Gold and Silver Members were honored to be the exclusive sponsor for Day 6 ("Climate Action & Regenerative Agriculture") of the month-long event on wine and sustainability. Our members were featured throughout NapaRISE, sharing expertise on topics including water efficiency, soil health, and glass lightweighting.

CO23 Climate Mitigation Conference

At this event hosted by the Australian Society of Viticulture and Oenology, our Board Member Josep María Ribas Portella provided a presentation on carbon capture, use, and storage technologies.



Karen MacNeil & Company believes that helping to solve the climate crisis is a collective responsibility, and that everyone in the wine community — not just wineries — can play a part. I am personally committed to ensuring wine's future via communication and education.

We believe wholeheartedly in the work that IWCA is doing to promote carbon emission reduction globally with our industry and are honored to contribute to IWCA.



Karen MacNeil

CEO of WineSpeed and Author of *The Wine Bible*; IWCA Media Champion

Medlock Ames (California, USA)

IWCA Member Spotlights

We're turning the next few pages over to our 33 Silver and Gold Members, sharing highlights of their climate action and environmental initiatives and reporting on their emissions data.

Months of challenging, detailed work go into compiling and auditing a GHG emissions inventory, involving staff across departments, external experts, and supply chain partners. Here, we share only high-level numbers on our Members' total emissions across Scopes 1, 2, and 3 for their baseline calculation year and their most recent inventory year — but we want to recognize the hundreds of data points and hours behind-the-scenes.

IWCA Silver and Gold Members must adhere to IWCA's [GHG Inventory Guidance](#), which outlines over three dozen primary activities (specific to wine producers) that must be covered in a wine company's Scope 1, 2, and 3 inventory. To ensure consistent, rigorous methodology and accurate results, each company's inventory then undergoes a stringent audit process before final verified inventories are submitted to IWCA by the company's auditor as part of the winery's membership commitment.



Winery profiles are listed first by membership level (Gold then Silver Members) then by alphabetical order.

Notes on the Inventory Data

Per Race to Zero requirements, members may choose whether to report absolute emissions or intensity emissions, though all members hold to the Race to Zero commitment to achieving absolute Net Zero carbon emissions by 2050 at the latest. The emissions data presented here are drawn from members' GHG emissions inventories, which must follow the [IWCA GHG Inventory Scopes Guidance Document](#). Among other IWCA requirements, the inventory must be verified by an external auditing firm of the winery's choosing that has been ISO-14064 or CDP accredited. We share here the most recent year of audited data that members provided to IWCA, along with their baseline year data. For many, their first year of data is their first year as an IWCA member; for other wineries that had previously conducted inventories, they have an earlier baseline year.

Per IWCA's policy, emissions reduction targets must be met based on a winery's own efforts to decarbonize, rather than through any purchased offsets. We do, however, encourage sequestration strategies carried out directly by members (such as reforestation on owned or long-term leased land). We invite member wineries to submit biogenic emissions data, but due to the lack of definitive research and scientific consensus on vineyard sequestration (e.g., short cycle emissions from vineyard photosynthesis or from wine fermentation), we do not presently count sequestration efforts toward meeting IWCA requirements.

As part of IWCA's aim to be the industry-leading organization on climate action, we have taken steps to ensure rigor and consistency in our wineries' GHG inventory and audit processes and greater transparency in emissions reporting, while simultaneously working to protect the security our wineries' data. Implementing these new procedures has involved transitioning some of our existing members to a new inventory and audit process. For these wineries, we have worked to ensure alignment with the new procedures.



Viña Undurraga (Chile)



Gold Members

Alma Carraovejas

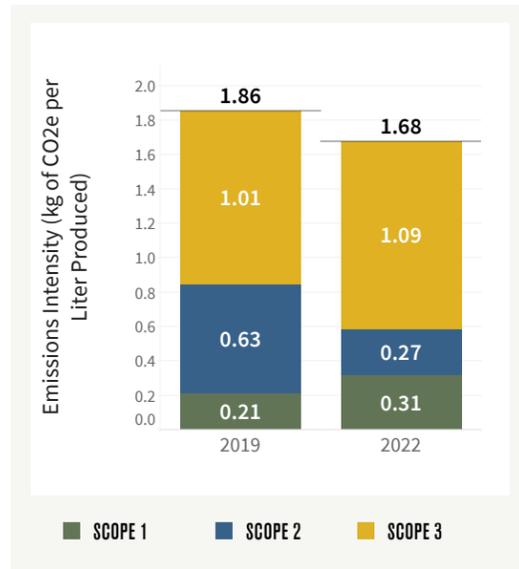
Spain ▪ Joined May 2020



ALMA CARRAOVEJAS

10% reduction in emissions intensity since 2019

25% powered by onsite renewable energy



Geographic scope: Pago de Carraovejas (Peñaflor, Valladolid), Ossian Vides y Vinos (Nieva, Segovia), Milsetentayseis (Fuentenebro, Burgos), Viña Mein-Emilio Rojo (Leiro, Ourense), Bodega Maraños (Pelayos de la Presa, Madrid). Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Alma Carraovejas acquired new vineyards in 2022 so their current year geographic scope is larger than their baseline geographic scope.



Alma Carraovejas (Spain)

Familia Torres

Spain ▪ Joined February 2019 (Founding Member)



36% reduction in emissions intensity since 2008

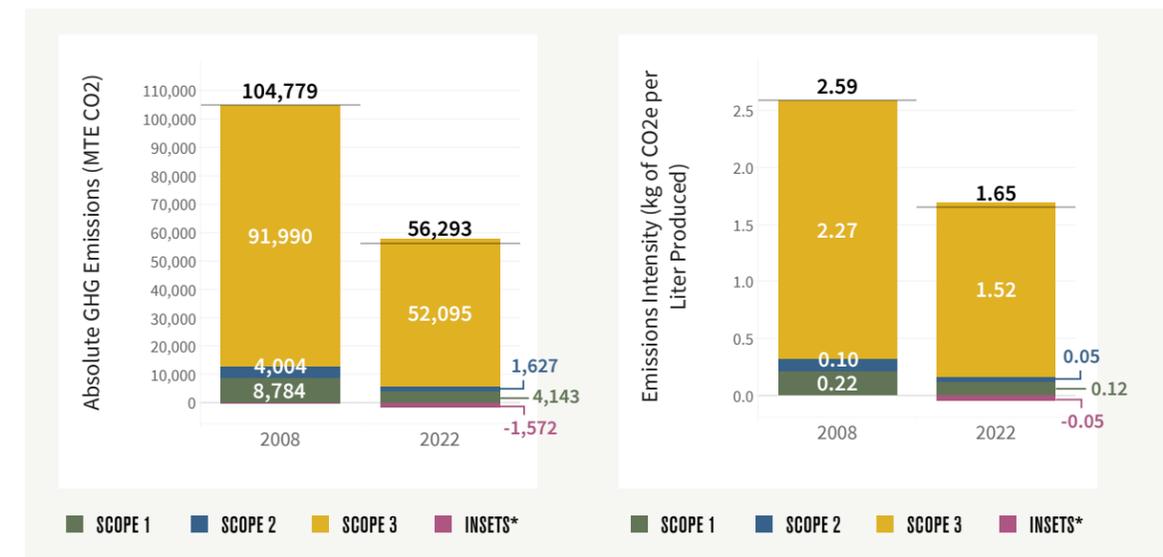
41% powered by onsite renewable energy

Bottle reuse: In October 2022, Familia Torres joined the first Spanish glass bottle reuse project at a national level — REBO2VINO — that is analyzing the feasibility of implementing a national system to reuse glass wine bottles. It's hopefully a system that could one day be expanded across Europe.

Bottle lightweighting: Familia Torres continues to work, together with its suppliers, to reduce the weight of its bottles. Currently, more than 95% of the 75 cl. bottles used are light weight (below 420 grams).

Carbon capture & reuse: This year, Familia Torres has expanded its carbon capture & reuse (CCR) system, in operation since harvest 2021, to extend the capture of CO₂ from fermentation up to two weeks. The ultimate goal of this pioneering circular economy solution is to be self-sufficient in CO₂ during the harvest campaign.

Regenerative practices: Since 2008, Familia Torres has grown its vineyards organically, and since 2020 the bar was raised by embracing a regenerative viticulture approach to help store atmospheric carbon in the soil while increasing organic matter and biodiversity and reducing erosion. Today, Familia Torres grows more than 500 ha under regenerative practices and by the end of 2023 a large part of the vineyards will be certified by the Regenerative Viticulture Alliance.



Geographic scope: Vilafranca del Penedes, Pags del Penedes, Sant Marti, Juneda, Constat, Portas y viñedos asociados. Reporting timeframe: Calendar year. Location-based electricity emissions reporting.

*Third-party verified reforestation or other carbon sequestration projects on owned or permanently protected land that meets globally recognized permanence and additionality requirements for nature-based carbon removal.



Jackson Family Wines (California, USA)

Jackson Family Wines

United States ▪ Joined February 2019 (Founding Member)

The company's portfolio includes Kendall-Jackson, La Crema, Cambria Winery, Cardinale, Freemark Abbey, Stonestreet, WillaKenzie and 40+ wineries across the globe.



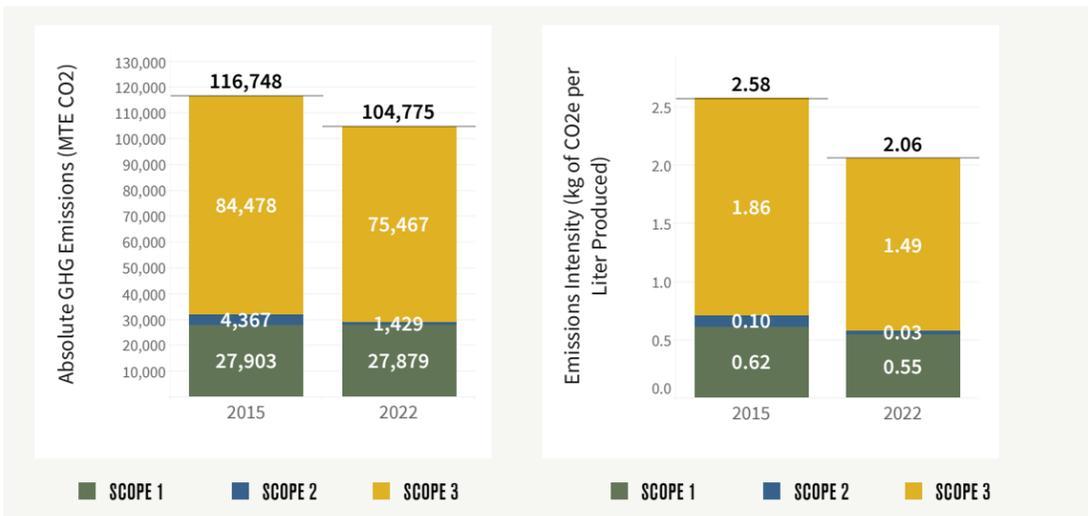
10% reduction in absolute emissions since 2015

21% powered by onsite renewable energy

Renewable energy: In 2023, we signed contracts to grow our solar portfolio by 44%, producing an additional 4 million kWh annually.

Regenerative practices: This past year, we led industry research in collaboration with some of the most renowned experts and scientists on regenerative farming impacts on soil health and carbon sequestration across 100+ acres in California and Oregon. We have transitioned 20% of our vineyard acres to regenerative farming practices, which accounts for approximately 2,000 planted acres.

Electric vehicles: We installed 60 new EV car chargers across offices, tasting rooms, wineries, and vineyards. We also deployed and piloting 4 new EV fleet vehicles and distributed 40 employee incentives for EV adoption.



Geographic scope: United States. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Jackson Family Wines' 2015 baseline was recalculated following the publishing of the 2022 Annual Report and thus differs from what was reported in the 2022 Annual Report.

Spottswoode Estate Vineyard & Winery

United States ▪ Joined December 2019



10% reduction in absolute emissions since 2019

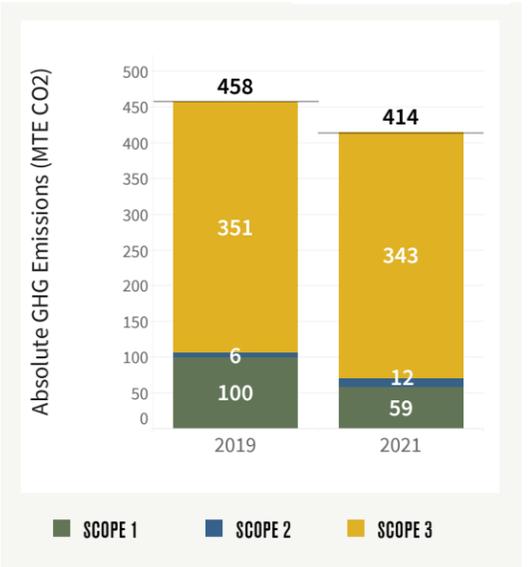
70% powered by onsite renewable energy

Glass lightweighting: We moved our Estate Cabernet Sauvignon from a glass mold that was 798g to one that is 564g. We will make another reduction with a 490g mold for the 2022 Estate Cabernet — a 38% decrease in bottle weight over a three-year period.

Renewable energy: We installed a new solar array at the winery to keep up with increasing EV demands. We are waiting for this new array to come online to quantify the effects of the project.

Cooling systems: In the beginning of 2022, we replaced an old HVAC system that was still using a small amount of R22 to a new system that functions with no refrigerants. This has reduced our absolute emissions by 2.8% from 2021 to 2022.

Regenerative practices: In 2023 we received our Regenerative Organic Certification. We have integrated sheep into our farming system as of 2021 and we are excited to continue to support regenerative organic farming philosophies.



Geographic scope: North America. Reporting timeframe: Calendar year. Location-based electricity emissions reporting. Missing categories: some Scope 3 emissions from purchased products, outsourced transportation, and outsourced production.



Spottswoode Estate Vineyard & Winery (California, USA)



Viñas Familia Gil (Spain)

Viñas Familia Gil

Spain ▪ Joined July 2022

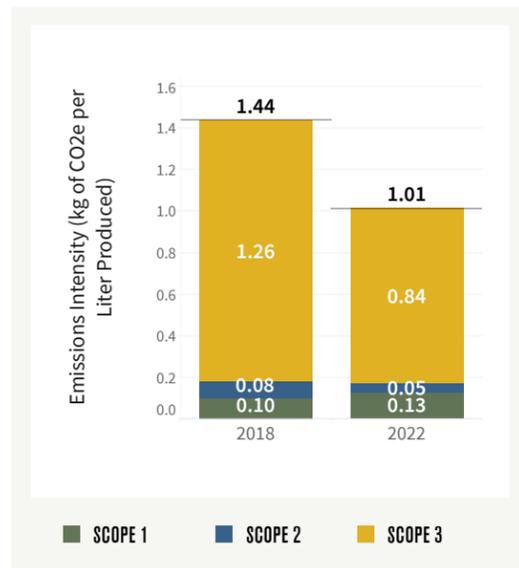


30% reduction in emissions intensity since 2018

39% powered by onsite renewable energy

Renewable energy: We added another solar park which is generating 330 kW. This enabled us to self-produce 40% of our electric power needs in 2022.

Packaging: As part of our shift to more sustainable glass bottles, we have adopted lighter weight bottles in additional references in our portfolio. In some cases, this has helped us reduce up to 28% of the weight of the package.



Geographic scope: Jumilla, Spain. Reporting timeframe: Calendar year. Market-based electricity emissions reporting.



VSPT Wine Group (Chile)

VSPT Wine Group

Chile ▪ Joined December 2019



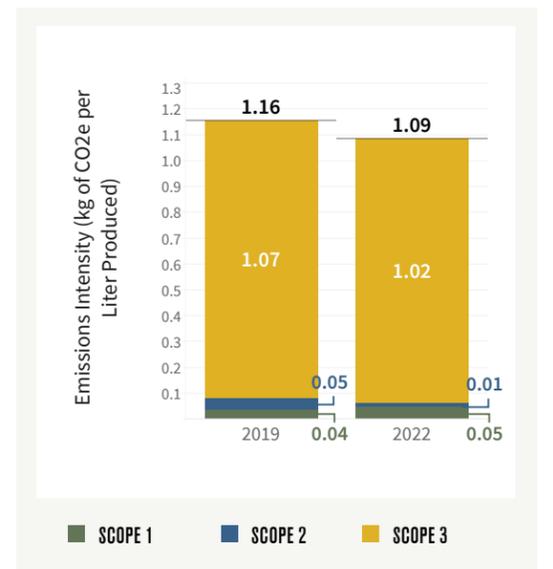
6% reduction in emissions intensity since 2019

28% powered by onsite renewable energy

Renewable electricity: We supplied our operation with 100% renewable electricity (including powering our 31% of our bottling and winemaking operations with onsite solar and 20% of our agricultural production). Over the past two years, we installed two new solar projects for a total of 10 solar plants in our facilities. We source additional power from 100% certified renewable sources through Power Purchase Agreements (PPAs).

Packaging: By continued bottle lightweighting, we have saved over 2,000 metric tons of glass annually. We're working with our main glass and cardboard suppliers to identify innovative solutions.

Waste management: 99.8% of our industrial waste is reused, recycled, or energy recovered. 100% of our organic waste is used to generate clean energy in our Biogas Plant or composted to become natural fertilizer for our vineyards.



Geographic scope: Chile. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. VSPT Wine Group switched to market-based emissions accounting and re-calculated their baseline year emissions to reflect this; as such, their baseline year emissions and emissions intensity values differ from what was reported in the 2022 Annual Report.

Yealands Estate Wines

New Zealand • Joined January 2020



25% decrease in emissions intensity since 2019

18% powered by onsite renewable energy

Renewable energy: In the past year, we commenced development of a 4.5 MW solar array. When completed (expected July 2024), we will produce up to 65% of our energy requirements onsite.

Biodiversity: Work on our 30-year Biodiversity Plan continues at pace. We're completing the third stage of the restoration of Station Creek, the main waterway running through our vineyard, and are planting more native trees this spring.

Packaging & bottling: Our primary focus continues to be on reducing our Scope 3 emissions (which account for approximately 70% of our total emissions), notably focusing on bottling in destination markets and lightweighting packaging wherever possible.

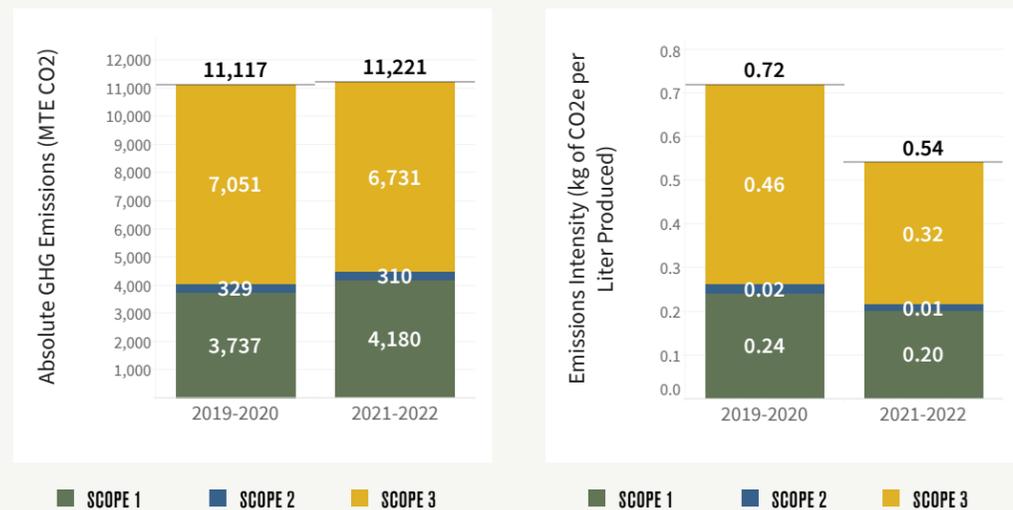
Financing: Within the past year, we have signed a Sustainability Linked Loan with the ASB Bank in New Zealand. The first of its kind within the industry, it provides a commercial incentive to achieve emission reduction targets.



Yealands Estate Wines (New Zealand)



Familia Torres (Spain)



Geographic scope: New Zealand. Reporting timeframe: July 2021 - June 2022. Location-based electricity emissions reporting. Missing categories: some Scope 3 emissions. Yealands Estate Wines reset its baseline year to 2019-2020 and its 2021-2022 values were recalculated following the publishing of the 2022 Annual Report; as such, they thus differ from what was reported in the 2022 Annual Report.



Silver Members

A to Z Wineworks

United States • Joined August 2021



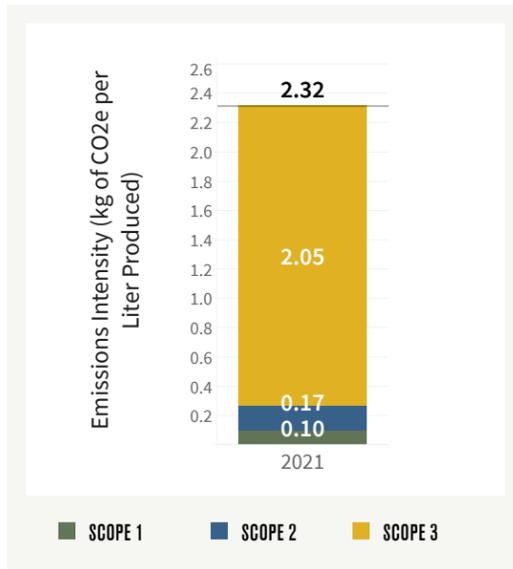
Energy efficiency: We upgraded lighting in two winery production buildings, replacing fluorescent tubes with energy efficient LEDs. This resulted in an estimated saving of 6 MTCO₂e per year. We replaced production facility compressed air distribution infrastructure, resulting in leak fixes (the energy efficiency gains of this work have not been measured yet).

Packaging: 2022 REX HILL wines were bottled without foils, saving an estimated 3.2 MTCO₂e.

Water efficiency: We used drought tolerant plantings in landscaping work, with a view to using less irrigation water once established.

Electric vehicles: Our employees now have access to four EV chargers in staff parking lots.

Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: some Scope 3 emissions from purchased products, outsourced transportation, and outsourced production.



A to Z Wineworks (United States)

Cakebread Cellars

United States • Joined September 2021

Cakebread Cellars

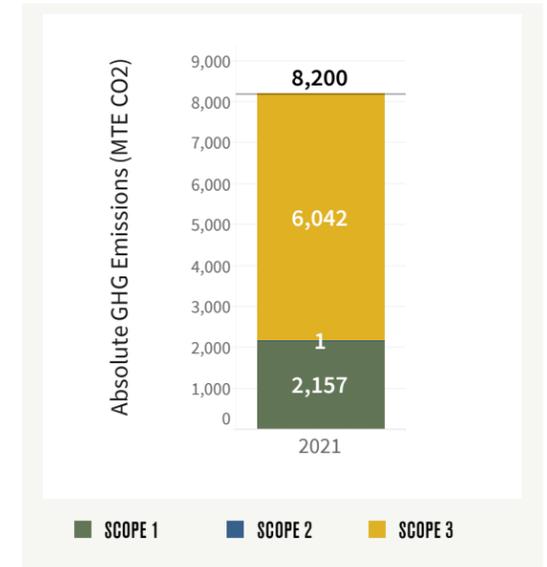


Water efficiency: 100% of our wastewater is recycled for use in our vineyards. 100% of the water used at our winery in the winemaking process is recaptured and naturally filtered for reuse.

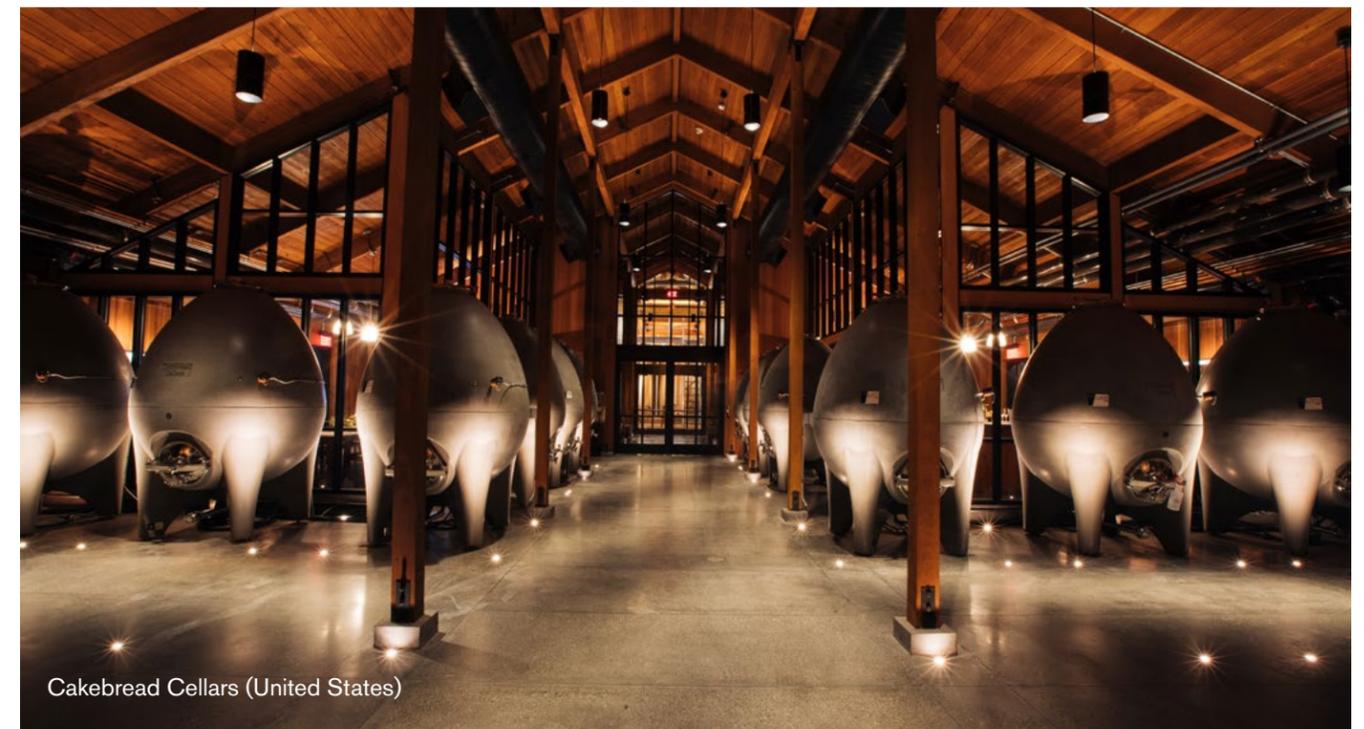
Soil health: In 2022 we produced 20 tons of compost and in 2023 we're on track to produce 50 tons. By maintaining healthy soil with beneficial soil fungi and bacteria, we project that we will be able to keep our vines healthy and productive for up to fifteen years longer than would normally be expected. This means fewer times using heavy machinery, fewer times replacing plastic and metal irrigation and trellis infrastructure, and fewer times disturbing the soil.

Digitalization: We have shifted our community communications to digital platforms. This saves more than 20,000 pages of paper every month.

Waste management: 88% of our total waste is diverted from entering landfills. Through recycling, composting, and reducing unnecessary usage, we are working toward diverting as much waste as we possibly can.



Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Cakebread Cellars' baseline was reset from 2019 and 2021. As such, the baseline values differ from what was reported in the 2022 report.



Cakebread Cellars (United States)

Château Troplong Mondot



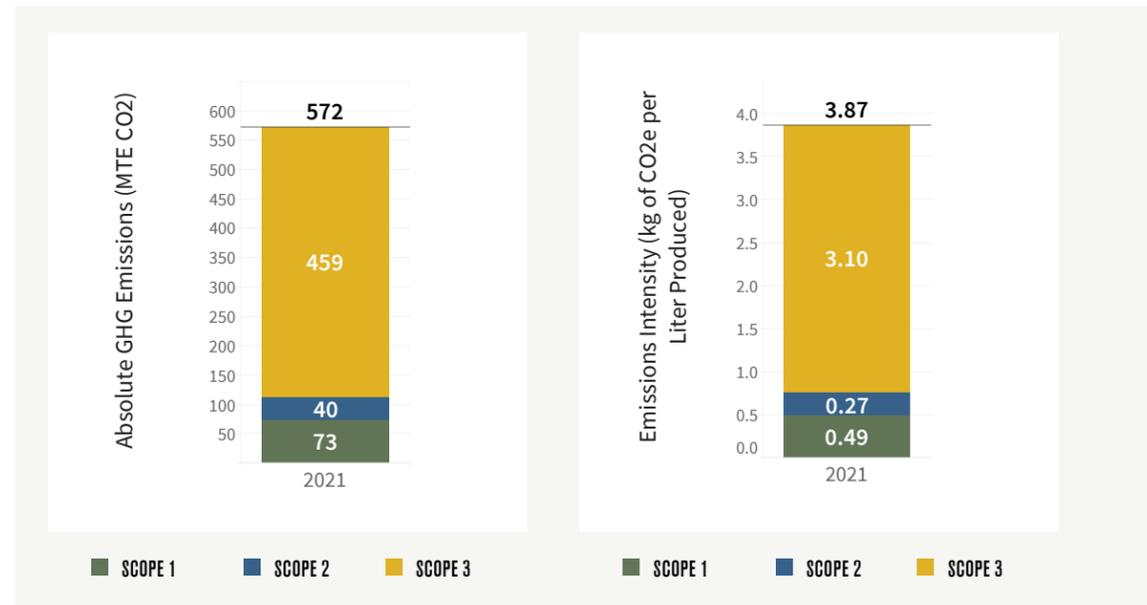
France ▪ Joined September 2021

Bottle lightweighting: This year, our winery switched from 585g bottles to 495g bottles for 27% of the wine volume we produced. This resulted in an 5% decrease in Scope 3 packaging material emissions from the previous year.

Packagaging and waste: We worked on using "green waste" as a resource and avoiding disposable packaging when possible. For example, our barrel suppliers delivered barrels with reusable packaging. We saw an 85% decrease in Scope 3 offsite solid waste and recycling emissions from the previous year.

Packaging and transportation: By switching 18% of bottle production from wooden cases to cardboard enabled us to reduce our Scope 3 case good transport emissions by 14%, largely due to the substantial drop in weight.

Emissions accounting: We changed the measurement tool and the agency helping us carry out our carbon assessment. This change enabled us to improve the accuracy of our analysis by working with a more physical than financial approach, in order to better understand the possible sources of improvement. Our 2022 carbon footprint is 1% higher than in 2021, partly due to this change in method, but also due to contextual changes (e.g., restart of travel after the pandemic).



Geographic scope: France. Reporting timeframe: Calendar year. Location-based electricity emissions reporting. Château Troplong Mondot's 2021 baseline was recalculated following the publishing of the 2022 Annual Report and thus differs from what was reported in the 2022 Annual Report.



Constellation Brands Fine Wines (U.S.)

Constellation Brands Fine Wines (U.S.)



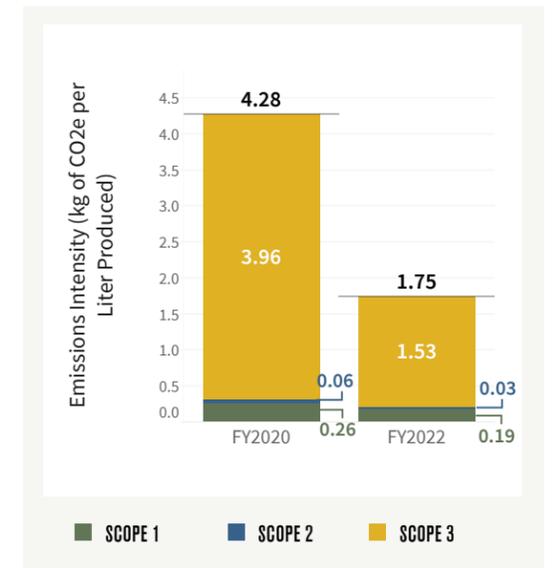
United States ▪ Joined August 2021

59% reduction in emissions intensity since 2020

Water efficiency: We are working to improve water efficiency by implementing employee education programs and adopting water management best practices. We have invested in expanded sub-metering and instrumentation to provide improved monitoring, tracking, and optimization. In our vineyards we have additionally incorporated new technologies to help maximize water efficiency and minimize overwatering, excess runoff, erosion, and unnecessary depletion of source supply.

Renewable energy: As part of our transition away from fossil fuels, we continue to invest in renewable energy and are in the process of implementing solar technology at several of our wineries. In 2023, we purchased six of the first commercially available Monarch tractors to replace traditional diesel-fueled specialty tractors.

Packaging: We have activated several sustainable packaging projects across our Wine & Spirits Division including lightweighting bottles, removing capsules, and optimizing labels and closures. This has helped improve material consumption, reduce transportation weight, increase recyclability, and contribute to reduced end-of-life consumer packaging waste.



Geographic scope: United States. Reporting timeframe: March 2021 - February 2022. Location-based electricity emissions reporting.

Crimson Wine Group

United States ▪ Joined August 2021

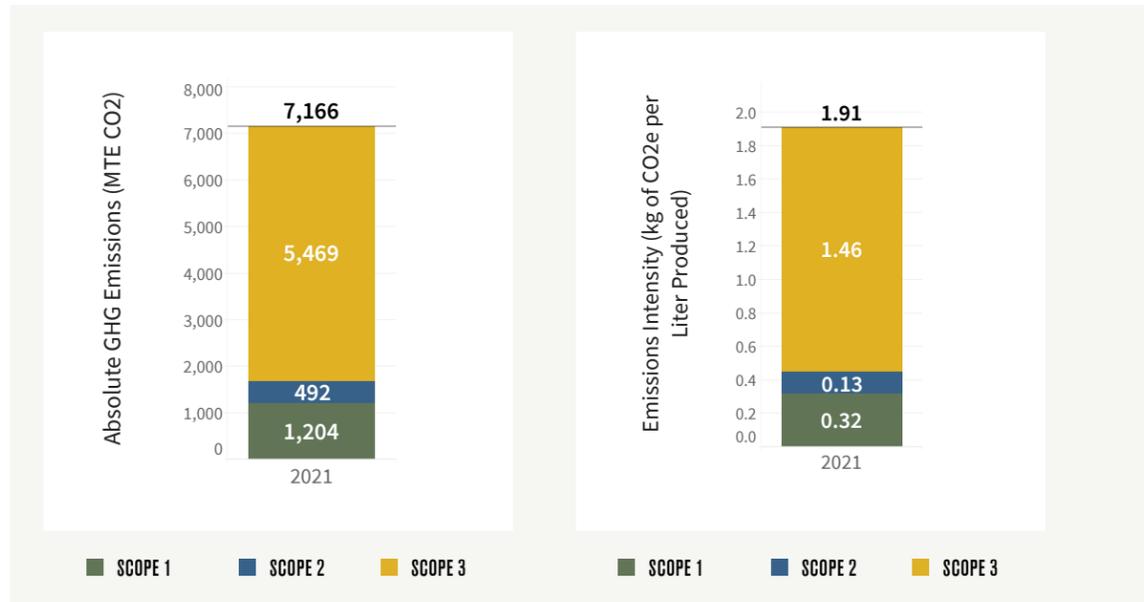


Tackling Scope 1: We reduced our Scope 1 emissions due to savings in waste water treatment, propane use, and refrigerant purchase.

Bottle lightweighting: One of our first actions has been to shift the majority of our production into 404g lightweight glass. We now stand at 464g per bottle on average throughout the company and we are examining options for glass under 400g for the future.

Forestation: Our Miyawaki forest continues to sprout. We established this mini-forest of 400 plants with the objective of providing habitat for the local fauna and understanding the potential of mini-forests to become carbon sinks.

Governance: We're seeing growing company-wide momentum in pursuit of carbon neutrality, illustrated by dedicated employee engagement and invested support by leadership. Our 25-person carbon council, structured around three working groups, is actively charting priority action areas across our company, developing a roadmap for our teams.



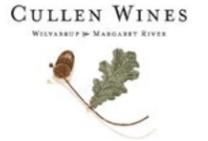
Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: some Scope 3 emissions from purchased products, outsourced transportation, and outsourced production.



Crimson Wine Group (U.S.)

Cullen Wines

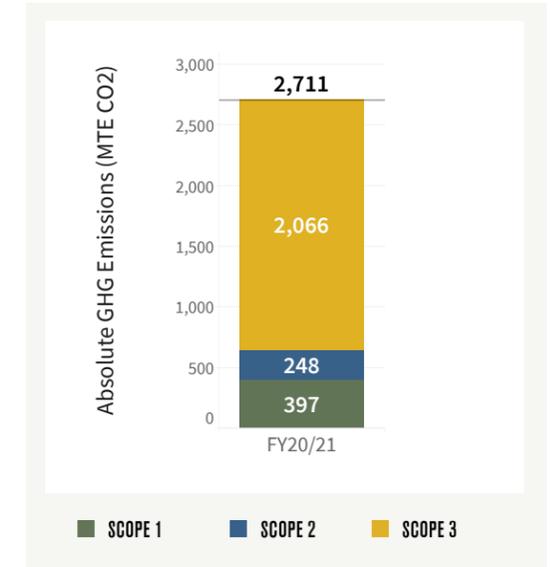
Australia ▪ Joined September 2020



Renewable energy: We signed off on an additional 50kW of Solar to be installed in November 2023. This will more than double our currently installed capacity. This will be combined with new extensive energy monitoring to help us understand, in detail, where and when we are using energy.

Bottle lightweighting: We changed two more of our lines to lighter-weight bottles of less than 350 grams. This will enable an average reduction 3,209 tons of glass per year — a 37% decrease — while enabling the reduction of 7 tons of CO₂e per year.

Team mobilization: We launched monthly sustainability meetings for our full team to collaboratively explore possible emissions reductions across all scopes. This is especially important for Scope 3; reducing these emissions will take a whole effort by every member of the Cullen Wines team.



Geographic scope: Western Australia (Wilyabrup and Cowaramup). Reporting timeframe: July 2020 - June 2021. Location-based electricity emissions reporting. Missing categories: some Scope 3 emissions.

Domaine Lafage

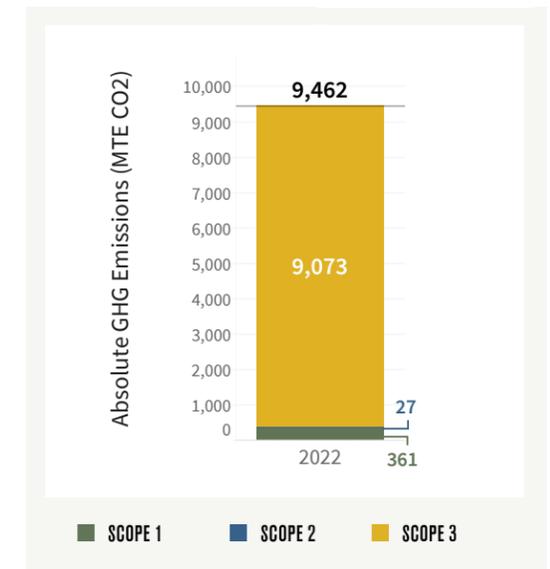
France ▪ Joined July 2022



Bottle lightweighting: We have reduced the weight of our bottles over the past few years. We saved 73 tons of CO₂e by lightweighting more than 350,000 bottles.

Carbon capture: We have a research department exploring carbon storage with biochar. Our current findings suggest that we can store 40 tons of additional CO₂e per hectare. Our goal is to store as much carbon as possible in our soils; as such, we are partially converting our vineyards to regenerative viticulture.

Renewable energy: 100% of the electricity we consumed at Domaine Lafage in 2022 came from renewable energy sources.



Geographic scope: Roussillon Region, Southern France. Reporting timeframe: Calendar year. Location-based electricity emissions reporting.



Emina Ribera



Spain ▪ Joined November 2020

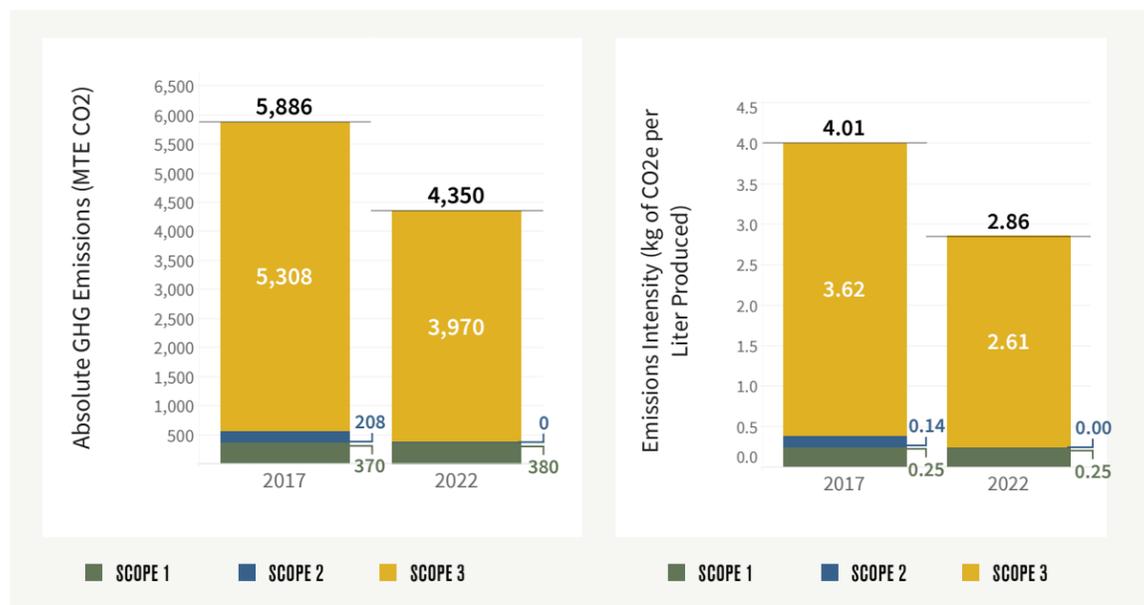
29% reduction in emissions intensity since 2017

Viticultural practices: By implementing integrated agriculture and monitoring the conditions of our vineyards through the installation of sensors, we have reduced the use of phytosanitary products, fertilizers, and agricultural fuel, achieving a 54% reduction in associated GHG emissions.

Waste management: Thanks to our cardboard and plastic waste compactor, we generate a smaller amount of waste and have reduced associated emissions by 68%.

Electric vehicles: We have installed charging points for EVs that are powered by onsite photovoltaic energy. These charging points are available to both employees and visitors.

Natural disease management: We have installed a spore catcher in the vineyard to avoid wood diseases. Powered by solar energy, it collects air samples for analysis in a microbiology laboratory and helps us identify spores of fungi responsible for wood diseases.



Geographic scope: Valbuena de Duero, Spain. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Emina Ribera's 2017 baseline was recalculated following the publishing of the 2022 Annual Report and thus differs from what was reported in the 2022 Annual Report.

Famille Perrin

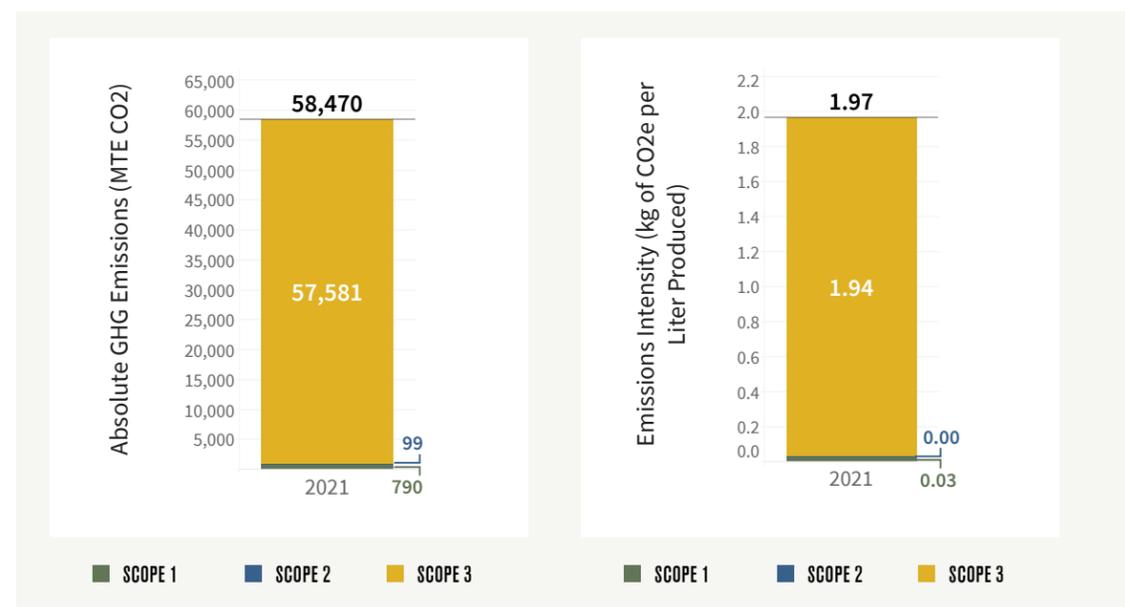


France ▪ Joined December 2021

Packaging: More than 65% of our bottles have been light-weighted, with some bottle weights reduced from 590 to 395 grams. In addition, we are slowly eliminating cardboard dividers from our packaging.

Agroecology: We are increasing the presence of grass-covered areas across our vineyards to account for 46% of our total surfaces. We are actively planting hedges and trees, with a goal of 2km planted by 2023. We are continuously refining our approaches, including cover crop implementation, hedge diversity, and further investment in animal traction featuring the use of horses.

Sustainable construction: Following a successful architectural competition, Studio Mumbai and Studio Méditerranée were chosen to environmentally renovate the Château of Beaucastel. This ambitious project involves utilizing rammed earth walls, underground storage, rainwater collection, natural ventilation through the mistral winds, and solar panels, which will achieve 80% self-sufficiency in water, electricity, heating, and cooling.



Geographic scope: Rhone Valley, France. Reporting timeframe: Calendar year. Location-based electricity emissions reporting.



Famille Perrin (France)



Felton Road (New Zealand)

Felton Road

New Zealand ▪ Joined April 2022



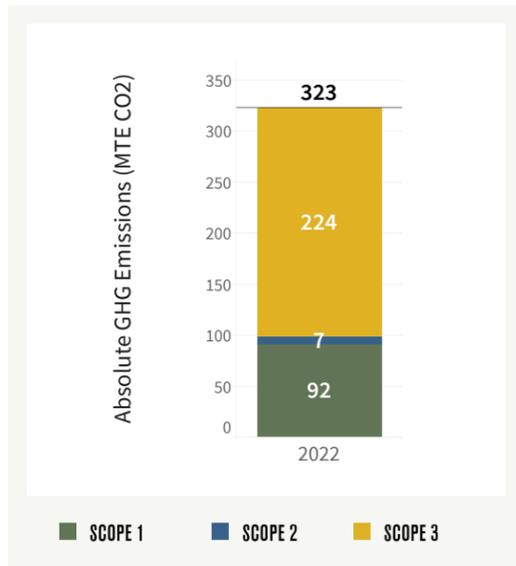
Shipping: We shifted our direct-to-consumer transport to the USA from air to ocean freight. In so doing, we saved 21 tons of CO₂e, or 6% of our total annual emissions.

Electric vehicles: We exchanged the diesel powered vehicles in our road fleet for EVs. In the first two months of use, two tons of CO₂e were saved. We expect this to increase to 15 tons across an entire reporting period.

Employee buy-in: Between employee EV purchases, company EV purchases, ridesharing, and employees cycling to work, we saved four tons of CO₂e. We expect this to increase to at least eight tons for the next reporting period.

Geographic scope: New Zealand. Reporting timeframe: June 2021 - May 2022. Location-based electricity emissions reporting.

An earlier version of this report erroneously published lower emission values, which have been corrected here.



Gloria Ferrer Winery

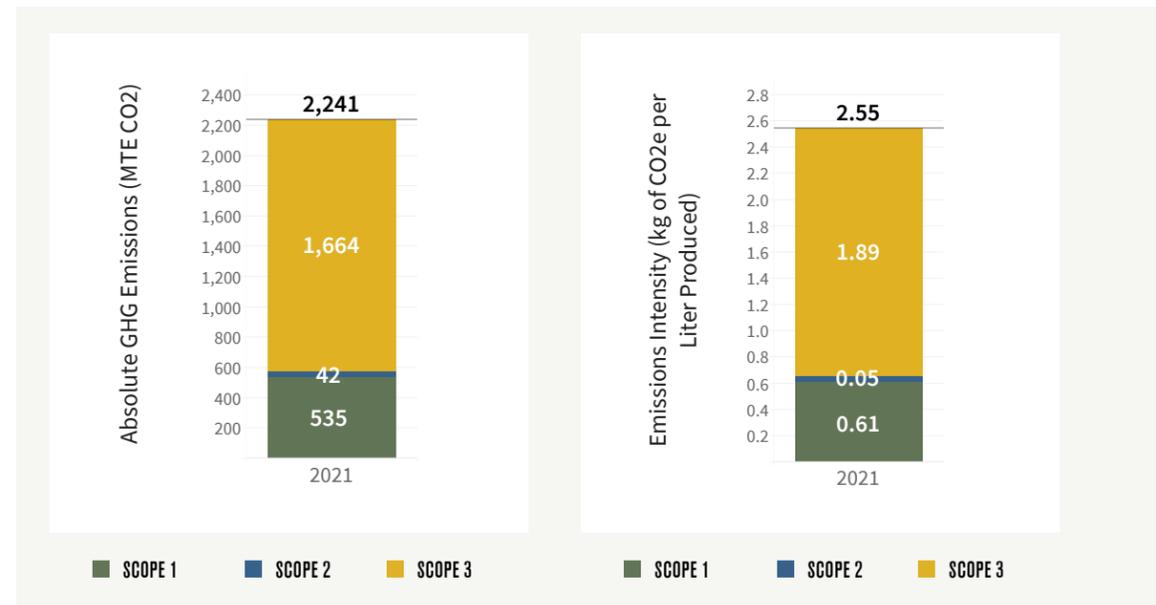
United States ▪ Joined June 2021



Electric vehicles: We have received our first electric tractor that we are using to replace diesel tractor usage and reduce our Scope 1 emissions.

Viticultural practices: We have fully eliminated high nitrogen fertilizer usage in our estate vineyards in favor of using compost produced onsite. This should dramatically reduce our N₂O emissions, while increasing soil carbon sequestration at the same time.

Wastewater management: We have significantly reduced the amount of wastewater generated from sanitizing tanks during the winemaking process through the introduction of new sanitizing technologies.



Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: some Scope 3 emissions from purchased products, packaging materials, outsourced transportation, and outsourced production.



Gloria Ferrer (California, USA)

Herdade dos Grous

Portugal ▪ Joined June 2022



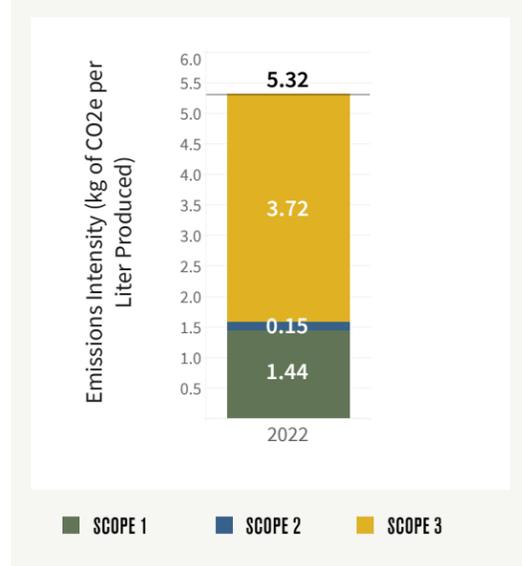
Bottle lightweighting: By reducing the weight of bottles on some of our lines, we have achieved a reduction of 130 tons of CO₂e.

Packaging: We try to influence our suppliers to adopt more sustainable practices. 85% of our corks, cartons, and wooden boxes are made out of materials coming from certified Forests with Sustainable Management.

Renewable energy: More than 36% of our energy needs are met through renewable sources. We have installed solar panels which allow us to avoid more than 82 tons of CO₂e.

Climate-resilient vineyards: 95% of the area of Herdade dos Grous' new vineyards was planted with autochthonous and regional grape varieties, which can be more resilient to extreme weather episodes. These vineyards were also planted following an East-West orientation, avoiding sunburn and allowing valuable varieties to grow at their best levels.

Geographic scope: Albernua, Beja, Portugal. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: some Scope 3 emissions from travel and postconsumption.



Herdade dos Grous (Portugal)

Herència Altés

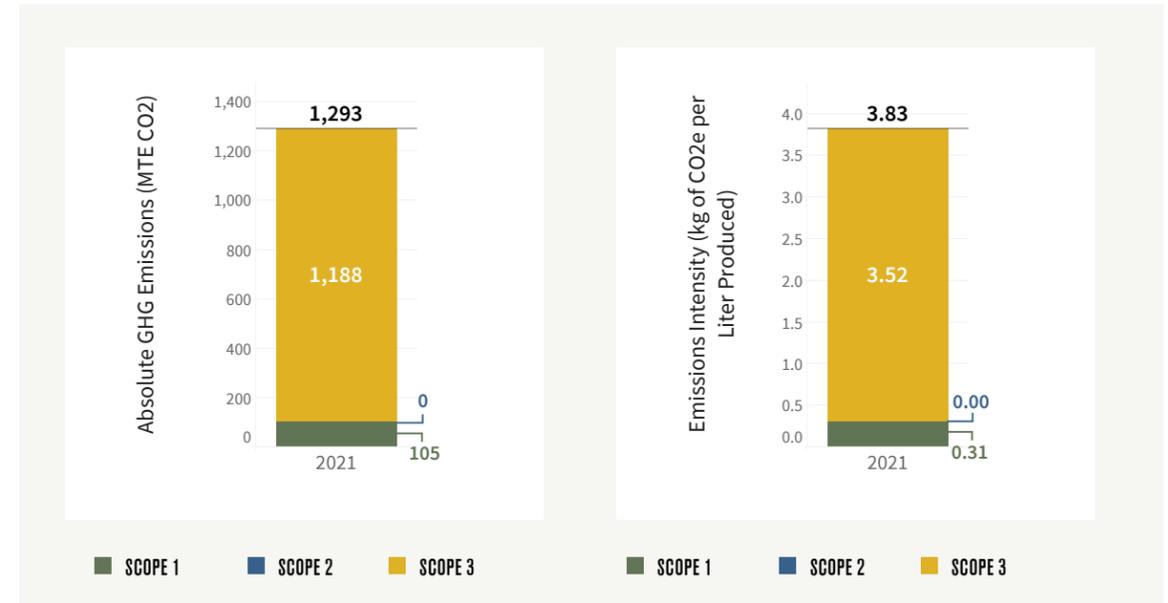
Spain ▪ Joined September 2021



Renewable electricity: In May 2023, we upgraded our onsite battery storage to lithium grade 100kW capacity, further reducing burning of diesel fuel for the generator. We are now able to meet 75% of our electricity needs through onsite solar.

Bottle lightweighting: We have lowered bottle weights for 400,000 bottles by an average of 120 grams, saving an estimated 48 tons of CO₂ emissions.

Transportation: We are prioritizing marketing in markets closer to our winery rather than distant markets to reduce emissions from staff travel (e.g., to trade fairs) and long-distance transportation of our goods.



Geographic scope: FINCA LO GRAU DE L'INQUISIDOR CTRA. N-420, KM. 798, 43780, Gandesa, Tarragona. Reporting timeframe: Calendar year. Location-based electricity emissions reporting. Missing categories: Scope 3 emissions from postconsumption. Herència Altés' 2021 inventory replaces the 2020 interim baseline inventory that was published in the 2022 Annual Report.



Herència Altés (Spain)

Hill-Smith Family Estates



Australia ▪ Joined August 2021

18% reduction in absolute emissions since 2010

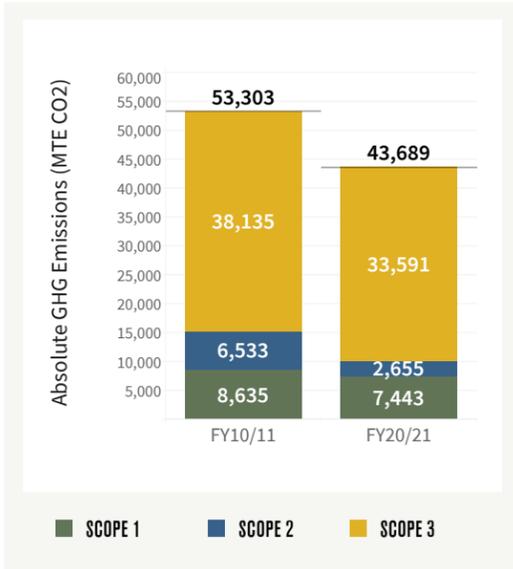
Cooling: We are partway through fast-tracking a program to replace air conditioning units with new compressors containing lower GWP refrigerants.

Electric vehicles: We have started to change our company fleet from petrol and diesel to hybrid or fully electric vehicles. And as we expand our electric forklift fleet, we are increasing our solar to cover this load. Currently we have 2MW on our main winery site providing 23% of our current electricity needs.

Packaging: To reduce our emissions from packaging, we have converted our larger volume wines to lighter weight glass bottles. We have also released a range of organic wines in casks as an alternative to glass bottles, reducing our carbon footprint. This is a reduction of 87% per packaging unit.

Energy efficiency: Energy efficiency of our wineries has improved by 4% (300MWh).

Biodiversity: We continue to manage and expand our 1000ha of native vegetation within and surrounding our vineyards and wineries.



Geographic scope: Australia. Reporting timeframe: July 2020 - June 2021. Market-based electricity emissions reporting.



Hill-Smith Family Estates (Australia)

Medlock Ames



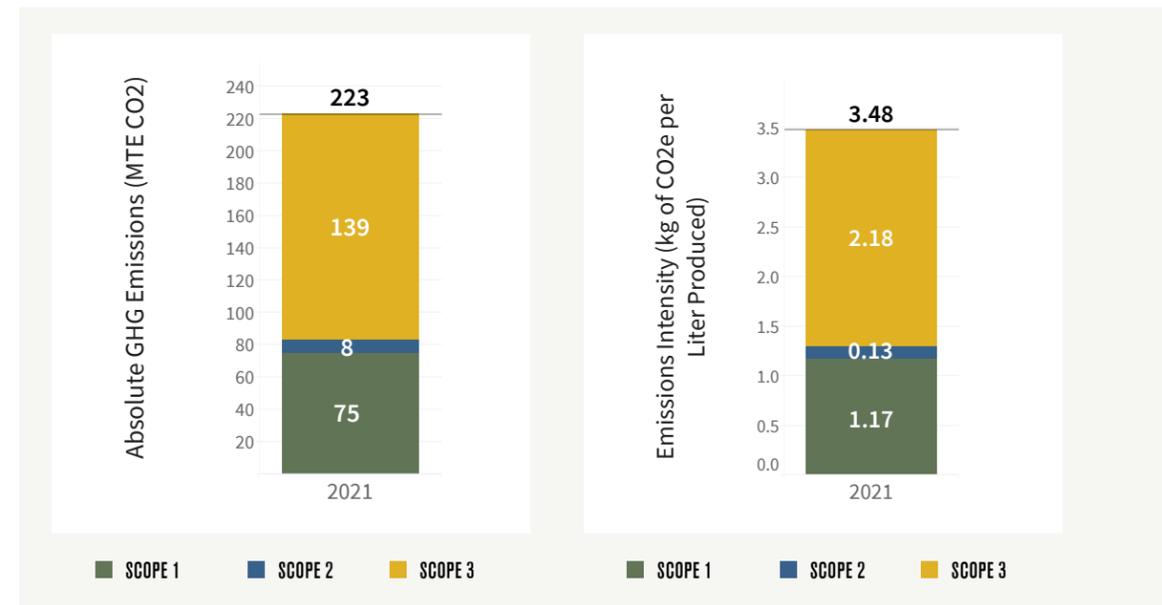
United States ▪ Joined July 2021

Regenerative practices: We completed the conversion of all of our land (330 acres, including 47 acres of vineyard) to regenerative farming. Our Regenerative Organic Certification achieved in 2022 augments the organic certification we have had since 2006. Practices include the elimination of tillage, increase in biodiversity, and re-introduction of sheep to graze our vineyards. These steps will allow us to store more carbon in our soil.

Electric vehicles: We introduced two electric tractors that will allow us to eliminate our need for diesel, a savings of 6 tons of CO₂.

Bottle lightweighting: Our largest source of emissions is our packaging and product transportation; this is profoundly influenced by the weight of our glass. We have begun reducing glass weight by 35%.

Renewable energy: Upgrades to our photovoltaic system allowed us to increase our solar energy production by 8%.



Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: some Scope 3 emissions from purchased products, outsourced transportation, and outsourced production.

Miguel Torres Chile

Chile • Joined January 2022

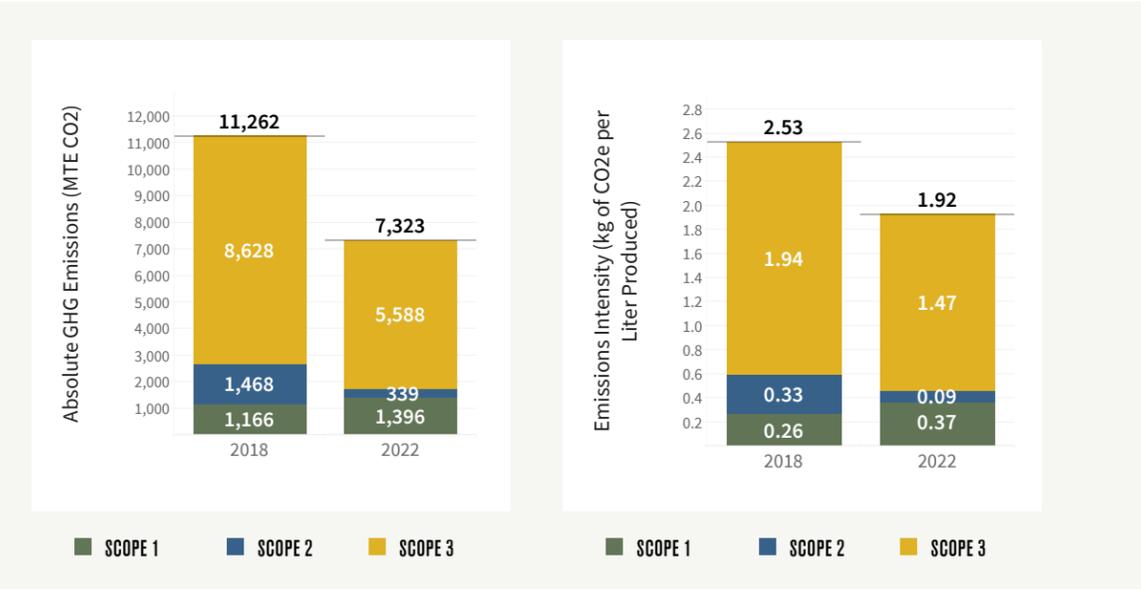


24% reduction in emissions intensity since 2018

Renewable energy: All of the energy we consume comes from renewable sources. For Chile, where a good part of the electricity grid is carbon-dependent, we're proud to self-generate photovoltaic energy in addition to purchasing renewable energy to supplement our needs.

Regenerative practices: We have been introducing regenerative agriculture on our farms to improve the quality, fertility, and biodiversity of our soils. This has significantly helped to reduce the impact of our viticulture activities by fixing carbon in the soil.

Packaging: We are working to reduce the weight and size of our packaging to reduce our GHG footprint. We are also incorporating a packaging business model in destination markets which will help us reduce our GHG emissions by 40%.



Geographic scope: Curicó, Region Maule, Chile. Reporting timeframe: Calendar year. Location-based electricity emissions reporting. Missing categories: some Scope 3 emissions from postconsumption.



Okanagan Crush Pad (Canada)

Okanagan Crush Pad

Canada • Joined May 2022

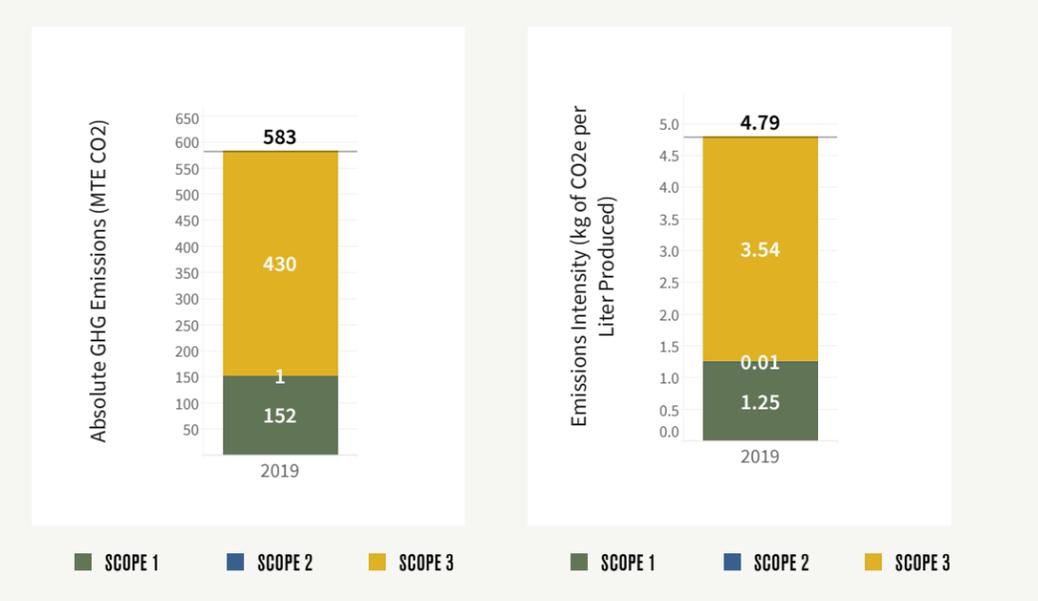


Glass lightweighting: By lightweighting glass on our Narrative XC sparkling line, we have saved 12 pounds of glass/case. In total, this is saving us approximately 36,000 pounds of glass (18 tons) of glass a year.

Packaging and transportation: Last year, we switched 2,125 cases to craft paper boxes to negate the printing and extra transport of our cases from original warehouse to winery.

Renewable natural gas: We are partnering with a renewable energy provider in British Columbia to transition to renewable natural gas, a byproduct from the decomposition of organic matter.

Vineyard management: About 400 chickens now live onsite at our Garnet Valley Ranch, in addition to our chickens and ducks at Switchback Vineyard location to help with insect control. This allows for fewer passes with a tractor and a decrease in the need for sprays.



Geographic scope: Okanagan, Canada. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: some Scope 3 emissions from outsourced bottling.

Piper-Heidsieck, Charles Heidsieck and Rare Champagne

France ▪ Joined April 2022

Energy efficiency: We replaced high-energy motors on three machines and 12 conveyors, reducing our power consumption by 30% on this bottle filling line. We installed energy meters and time programmers on our air stations to reduce their consumption by 20%.

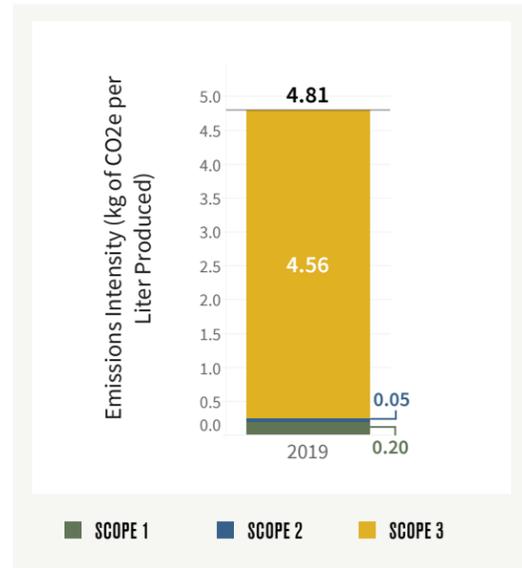
Electric vehicles: We installed electric charging terminals which avoided 3MTCO₂e since 2022. New company vehicles are all electric or hybrid.

Biodiversity: 300 trees and shrubs were planted by our teams in 2022 and a study on biodiversity was carried out on our Courmas vineyard.

Viticultural practices: Our vineyards are certified "Sustainable Viticulture in Champagne" and "High Environmental Value."

Bottle lightweighting: Piper-Heidsieck uses the lightest champagne bottle on the market (7.2% lighter than the average) and Charles Heidsieck has reduced the weight of its bottles by 2.8%.

Geographic scope: Champagne Region, France. Reporting timeframe: Calendar year. Location-based electricity emissions reporting.



Ridge Vineyards

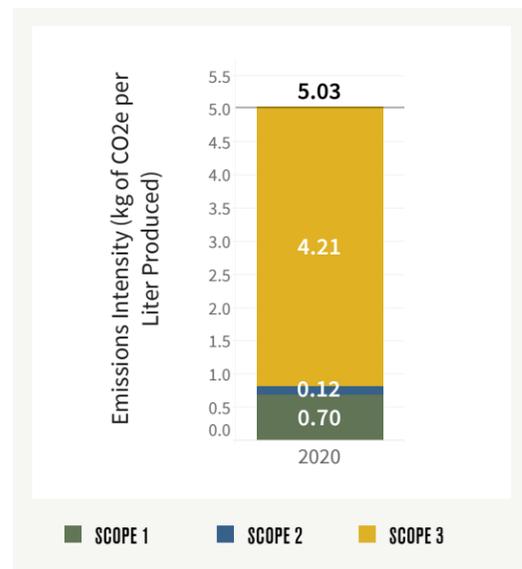
United States ▪ Joined August 2021

Renewable energy: We are generating our own power at Lytton Springs via solar panels and purchase entirely certified green energy for all of our facilities.

Bottle lightweighting: We have already been using one of the lightest glass bottle options on the market at 550 grams, which is the global average. However, we are moving toward a lighter glass bottle at 454 grams that is produced in the United States.

Packaging: While our branded wood boxes are popular with collectors, we acknowledge that there are better options available. That's why we're switching to a new three-bottle box made from 100% recycled paper, water-based ink, and green cell foam packing materials. This innovative product is a natural, environmentally friendly option made from corn that dissolves in water.

Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: vineyard soil emissions (Scope 1).



Silver Oak and Twomey Cellars

United States ▪ Joined May 2020

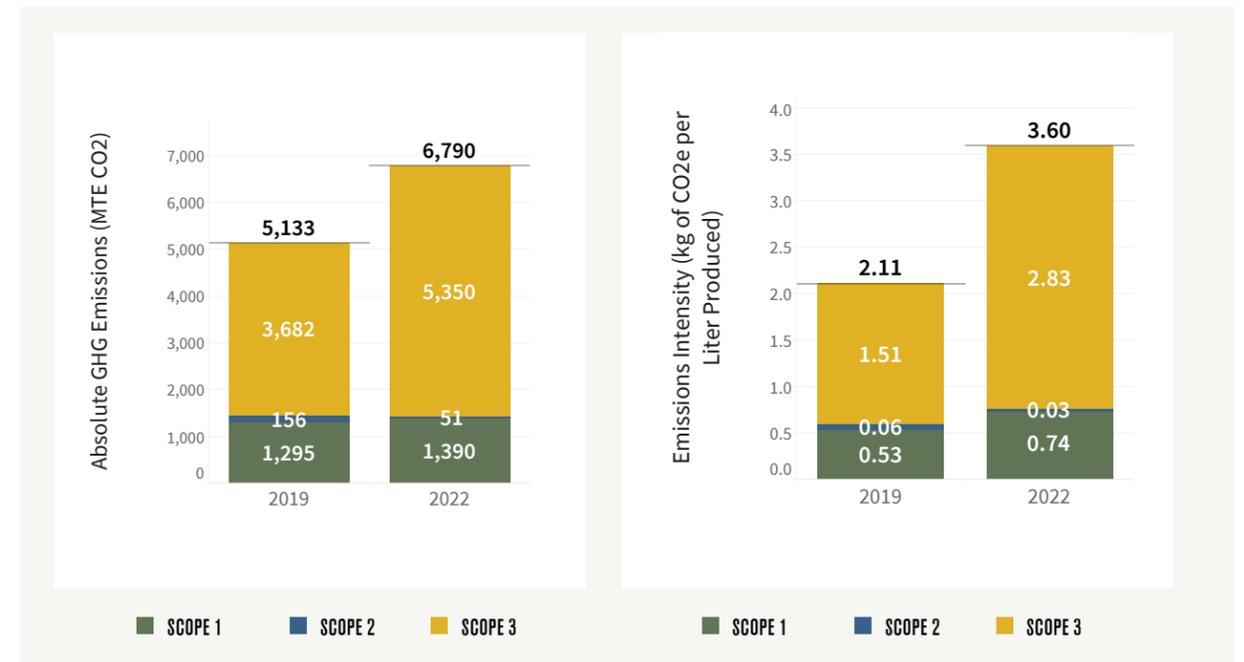


Water efficiency: On average, it can take more than six gallons of water to make one gallon of wine. Our team in Alexander Valley now has that down to a 1:1 ratio through water reclamation and downcycling efforts.

Renewable energy: We've installed 35 solar panels to offset 100% of our energy consumption at our largest estate vineyard site, with a barn and mechanics' shop, in the Napa Valley.

Bottle reuse: We've continued to explore and make progress on the topic of glass bottle reuse, with an initial focus on sanitizing and re-using bottles used in our Silver Oak tasting rooms as proof of concept. We hope to implement this initiative in the future.

Environmental and social impact: We completed the certification of the 113-acre Soda Canyon Ranch under the new Napa Green framework, a local sustainable winegrowing certification that focuses on climate action, regenerative farming, and social equity, justice, and inclusion.



Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Silver Oak changed to liters fermented reporting this year, which affects their emissions intensity reporting; as such their baseline year emissions intensity is different from what was reported in the 2022 annual report. Silver Oak also reported additional emissions categories in 2022 compared to its 2019 baseline, resulting in an emissions jump.

Sogrape

Portugal ▪ Joined June 2022



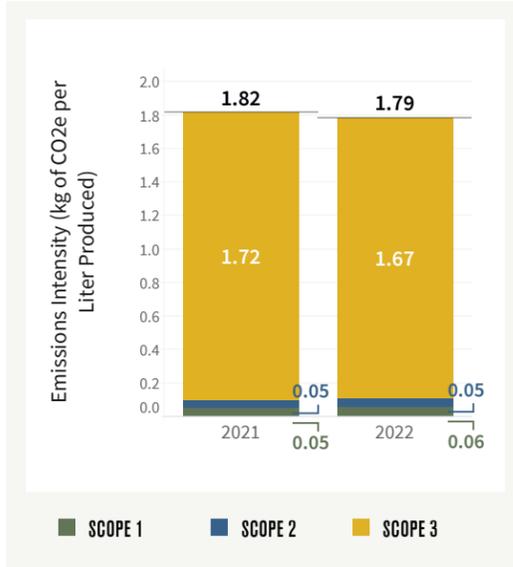
2% reduction in emissions intensity since 2021

Transportation: Through backhauling (reverse logistics), we have eliminated the need for hundreds of trucks that would otherwise drive empty each year (by reducing empty routes of shop delivery vehicles when they return from their last delivery, and suppliers' vehicles after delivery at the warehouse).

Packaging: From 2013 to 2022, we have reduced the amount of glass in our bottles by over 12,700 tons. In Portugal, 43% of our bottles are lightweight (which we consider to be less than 420 grams for 75cl bottles). All of our cardboard boxes are made from recycled cardboard, and our forest products (barrels and cartons) certified by the FSC (Forest Stewardship Council).

Water efficiency: 67% of the vineyards we own in Portugal are cultivated with rainwater. Using drip irrigation in these vineyards, we have saved 15% water use per year. Flow reducers have saved 3,000m³ per year.

Biodiversity: We have created a 1km-long biodiversity trail at Quinta do Seixo in Douro, Portugal. An educational experience for visitors, the trail includes semi-natural spaces and ecological infrastructures created in the vineyard such as hedges, inter-row and/or headland turfing, and restored stone walls with the aim of hosting arthropods, birds, small mammals, fungi and plants.



Geographic scope: Portugal (Vinhos Verdes, Douro, Trás-os-Montes, Dão, Bairrada, Lisboa e Alentejo). Reporting timeframe: Calendar year. Market (Scope 2), Location (Scope 3 T&D losses)-based electricity emissions reporting.

Ste. Michelle Wine Estates

United States ▪ Joined February 2023

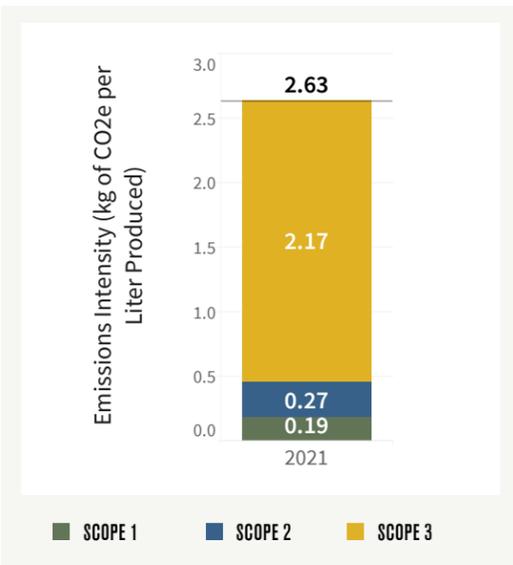


Bottle lightweighting: We have adopted lighter weight glass for a selection of our flagship brands, switching from 533g bottles to 468g.

Resource conservation: We have water conservation and recycling programs in place at all of our wineries — recycling an average of 1,872 tons a year.

Viticultural practices: Our estate vineyards are farmed 100% sustainable and certified so. In Oregon, our estate vineyards are certified LIVE and in Washington, our estate vineyards are newly certified Sustainable WA, a local certification specific to the Washington terroir.

Geographic scope: North America. Reporting timeframe: Calendar year. Market-based electricity emissions reporting.



Sula Vineyards (India)

Sula Vineyards

India ▪ Joined July 2021



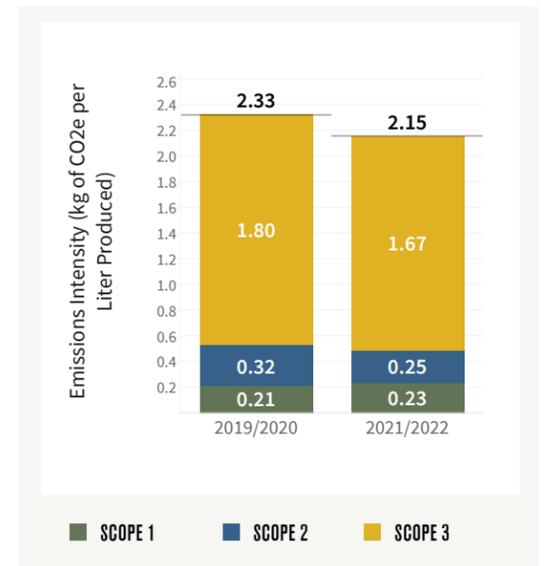
7% reduction in emissions intensity since 2019

Renewable energy: In FY2022, we installed more than 500kW of onsite solar panels, elevating our overall company solar contribution to 60%.

Electric vehicles: Our long-term target is to move our vehicle fleet from fossil fuel to electric vehicles. In 2022 electric vehicles represented 20% of our fleet. We have installed 20 EV charging stations for staff and visitors at all our facilities and plan to install more in the coming years.

Water consumption: In 2022 we managed to reduce our water consumption per case by 16% compared to our baseline year.

Geographic scope: States of Maharashtra and Karnataka, India. Reporting timeframe: April 2021 - March 2022. Location-based electricity emissions reporting. Missing categories: some Scope 3 emissions from purchased products, packaging materials, postconsumption, and tasting room traffic.



Symington Family Estates

Portugal ▪ Joined December 2019



4% reduction in emissions intensity since 2018

Renewable energy: In 2022, we installed 600kWp of solar panels at seven sites. We're prioritizing our largest consumers: bottling plants, large wineries, cellars, and visitor centers. Furthermore, four of these projects include powering our vineyard irrigation. Combined, these projects are expected to provide up to 25% of our total annual electricity needs.

Electric vehicles: We are continuing to move away from fossil fuels. In 2022, 17% of our fleet was either electric or hybrid. At the same time, we have been installing more electric car charging points on our premises. There are now 20 and more will be added at our Douro locations.

Bottle lightweighting: Our lightweight program reached a major milestone in 2022, when several bottle references started operating, avoiding 410 tons of CO₂e. This reduction represents 1.5% of our total emissions. The average weight of our 75cl bottles across all categories (Port, Still and Spirits) is now 472 grams.



Symington Family Estates (Portugal)

Viña Undurraga

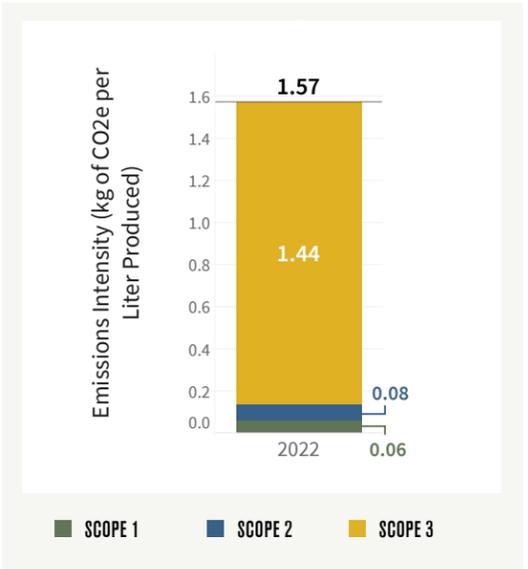
Chile ▪ Joined December 2021



Waste management: In 2022, we recycled 420 tons of waste, which avoided 219 tons of CO₂e.

Packaging: We eliminated capsules from our orange Brut Sparkling line, which represented a decrease in weight of 28.6% and will avoid 30 tons of CO₂e. We changed our Sibaris wine bottle to a lighter weight bottle, a decrease in weight of 3.9% that will avoid 375 tons of CO₂e.

Geographic scope: Planta Talagante, Región Metropolitana, Chile, Planta procesadora de vino en la región de O'Higgins y 4 viñedos ubicados en las regiones del Maule, Valparaíso y Talagante, Además, el proceso outsourcing envasadora Les Grands Chais, Petersbach, France. Reporting timeframe: Calendar year. Location-based electricity emissions reporting. Viña Undurraga reset its baseline year to 2022 inventory, so the 2022 values replace the 2021 inventory values that were published in the 2022 Annual Report.



Voyager Estate

Australia ▪ Joined December 2021

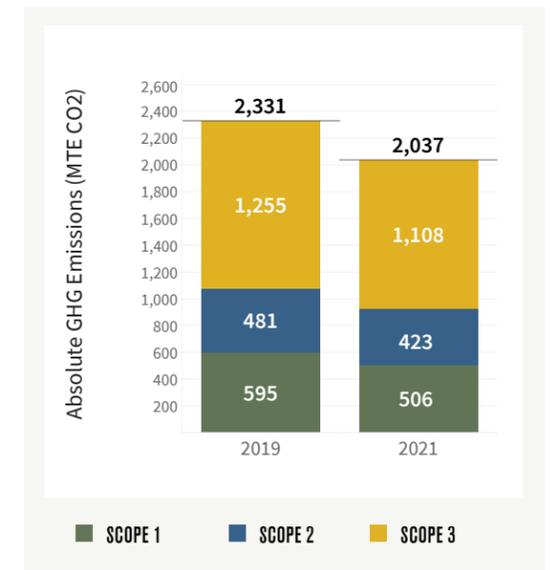


13% reduction in absolute emissions since 2019

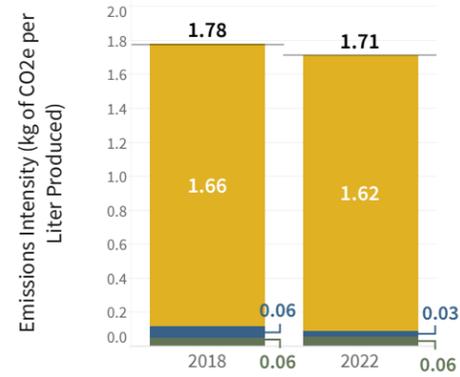
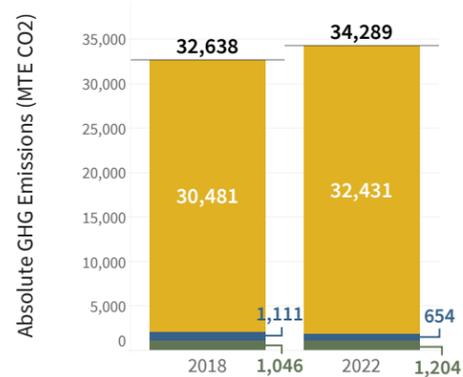
Renewable energy: We installed an additional 40kW of solar power, bringing our total onsite renewable energy generation to 20% of our needs for 2022.

Packaging: We introduced lighter weight bottles to four of our wines in 2023 (average bottle weight of 419g), which reduces glass weight by nearly 21,000kg, with potential emissions savings of around 14 tons of CO₂e per year just for packaging. We also stopped printing vintage years on cardboard boxes to avoid the waste associated with unused boxes and have switched to 100% post-consumer recycled materials for our box dividers.

Biodiversity: We completed a 21ha carbon and biodiversity revegetation project, planting over 13,000 seedlings and spreading over 30 different native species. We are registering the project for verified carbon storage (carbon credits), kicking off in 2025. The planting is estimated to store over 9,000 tons of CO₂e over the 25-year crediting period.



Geographic scope: Australia. Reporting timeframe: Calendar year. Market-based electricity emissions reporting. Missing categories: Scope 3 emissions from grapevine trellising.



Geographic scope: Portugal (Douro Valley and Alentejo Region). Reporting timeframe: Calendar year. Location-based electricity emissions reporting.

Our Applicant Members

Our Applicant Members are the newest members of the IWCA community.

Wineries of all sizes from across the world, they are working to complete a baseline, audited GHG emissions inventory on their path to achieving IWCA Silver or Gold membership.





Joining IWCA was the first milestone in our CSR strategy. It challenged us to rigorously and methodologically measure our carbon footprint within a well-defined framework, and to actively think about the next steps to achieve the Race to Zero goals.

We feel very lucky to be part of a group that openly shares ideas and best practices around this common environmental mission, and spreads awareness to others in the wine industry.

We can only urge wineries around the world to join us to strengthen our collective voice and find new ways to achieve carbon neutrality by 2050.



Aymeric De Gironde

CEO, Château Troplong Mondot (France)

IWCA Silver Member



Spottswoode Estate Vineyard & Winery (California, USA)

Collective action is the only way to transform the wine sector.
We're doing it for the future of our businesses, our industry, and our planet.

Will you join us?



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