

Crimson Wine Group

Our Race to Zero Green House Gas Emissions Roadmap

Updated January 2025

Introduction

Crimson Wine Group (CWG or Crimson) considers itself at the forefront of climate action, as demonstrated by our silver membership with the International Wineries for Climate Action. We are one of the few wine companies in the world to do a complete ISO 14064 certified Green House Gas (GHG) inventory. We are also signatories to the United Nations 2050 race to zero and this document is our roadmap. In addition to doing our part to fight climate change, we intend to find cost-savings and to increase engagement with like-minded consumers through these efforts.

This document contains forward-looking statements about our future activities, plans, objectives, expectations, and future other conditions. Please see the Disclaimer and Forward-Looking Statements section at the end of this document for more information about factors that could cause actual results to differ materially from our forward-looking statements.

Calendarization of our roadmap

At Crimson we operate on a five-year plan, and we have decided to phase our efforts in five-year increments. Internally this allows us to mobilize our resources ahead of time and communicate our plans with our associates. We believe this will also help us communicate to our suppliers, our clients and our consumers.

Our first GHG emission inventory was done for the 2021 fiscal year, and we refer to that year as our “baseline year”. We acknowledge that we were likely not the best at computing our emissions in 2021 as it was our first time. This was confirmed by several increases in total emission uncovered during our 2023 audited inventory. We continue to strive to refine our accounting methods every year and we may see and share demoralizing rises in emissions in certain fiscal years due to better accounting. We may also restate our baseline year if we acquire other businesses that were obviously not part of our calculation in 2021. Regardless, our goal is to get to zero net emissions by 2050.

We have calendarized the next 27 years into the following phases:

- **Phase 1:** (finished): 2021 through 2024: We’ve established a companywide and interdisciplinary carbon council. The council was further subdivided into three committees: Measurements, Solutions, and Communications. The Solutions subcommittee is responsible for the publication of our first race to zero (RTZ) plan in 2023 and will update our RTZ plan yearly thereafter. The Measurements subcommittee is focused on accurate GHG inventories. The Communications subcommittee informs all our stakeholders of our efforts and gains their support. Our GHG emissions inventory has been completed every year (FY21 and FY23 are audited externally and



are ISO 14064 certified). We have established FY21 as our baseline year and will compare our yearly GHG inventories to that baseline forward.

- **Phase 2:** 2024 through 2028: We are planning on a 10% emission reduction primarily focused on glass weight reduction, the deployment of solar panels and the beginning of the elimination of fossil fuel uses. By 2025 we will have reduced our glass weight by 3% since 2023. We also have executed the deployment of solar panels at Pine Ridge in Napa and have conducted a review of all our fossil fuel consumption sources.
- **Phase 3:** 2029 through 2033: We are planning on a 15% emission reduction with the continuation of the deployment of renewable energies and further reduction in the use of fossil fuels. We will also start tackling several scope 3 initiatives on purchased products, alternative packaging, refrigeration and third-party fossil fuel uses.
- **Phase 4:** 2034 through 2038: We are planning on a 20% emission reduction. This will be the tail end of the abandonment of fossil fuels for us. We will be in the middle of eliminating all our waste and will continue to deploy renewable energies
- **Phase 5:** 2039 through 2043: We are planning on eliminating 30% of our emissions during this period. We will accelerate our transition to suppliers and clients that also have made significant headways in their transition. We are also counting on our soil's emissions to be fully offset by our soil study results and to have soil sequestration recognized by the GHG protocol
- **Phase 6:** 2044 through 2048: We are planning on a 17% emission reduction from the end of our transition to like-minded suppliers and clients.
- **Phase 7:** 2049 and 2050: The final phase of our RTZ plan with a further 9% reduction in emissions and the recognition of our efforts for the management and reforestation of our non-production land. We achieve net zero emissions

CWG baseline absolute GHG emissions – 2021

CWG reports its GHG inventories in terms of total, or absolute emissions, and emissions per liter of wine produced, also called emission intensity. For the purpose of the RTZ we are focusing on the extinction of the absolute GHG emissions by 2050.

There are three scopes of emissions that are expressed in equivalent metric tons of carbon dioxide (mte) as described in the table below:

Scope 1 (16%) direct emissions 1,200 mte	Fossil Fuel uses 617 mte	Stationary uses such as propane for frost control fans in vineyards (334 mte) Mobile uses such as diesel for tractors (283 mte)
	Vineyard practices 369 mte	Such as the use of fertilizer and soil emissions
	On site waste treatment 116 mte	Potential treatment and reuse of wastewater for irrigation and or frost protection
	Refrigerant use 97 mte	Eliminate freon type refrigerants by converting them to ammonia charged systems
Scope 2 (9%) Energy 492 mte	Electricity purchased for own operations	Increased solar and potentially battery (power-wall technology) as technology develops



Scope 3 (75%) Supplier & Customer emissions = 5,473 mte	Purchased products 1,835 mte	Other supplies such as purchased grapes, wines, barrels, winemaking supplies, vineyard supplies, winemaking services
	Packaging 1,450 mte	Packaging for our wines
	Downstream fossil fuels 744 mte	Fossil fuel used to get supplies to their point of consumption
	Travel and commute 381 mte	Transportation use by us to visit the market or to get to our place of work. Also includes estimates of emissions resulting from estate visitation
	Refrigeration 445 mte	Refrigeration estimated for our downstream supply chain (distributor and consumers)
	Offsite waste 314 mte	Landfill, wastewater treatment and composting emissions
	Upstream fossil fuels 184 mte	Fossil fuel used to get supplies to us
	End of life emissions 108 mte	Estimate of the emissions generated by post-consumer waste
	Fertilizer used 16 mte	Emissions from nitrate oxide released by fertilizer used in vineyards
	Land conversion 4 mte	Lands removed from the wild (fallow land replanted to vineyards)

Note that at this point the “Short Term Carbon Cycle” GHG emissions (STCC) and sequestration activities are not accounted for by the GHG protocol. We do keep track of these GHG flows should they get included by the United Nations into their calculation. Should these flows be included, their net impact is currently negative 1,190 mte. The STCC GHG emissions for our baseline are included in the table below.

CO2 from fermentation	335 mte
Sequestration in vineyards and forests	-472 mte
Row cropping sequestration	-418 mte
Compost application	-635 mte

A note about carbon sequestration on our land: Regarding sequestration on our own land, we have attempted to join an intensive three-year study led by the USDA that was going to highlight the potential and extent of soil carbon sequestration. It was made impossible due to the publicly traded nature of our company. We are building maps of our estates to understand what could be returned to nature. We estimate that if 50% of this acreage is planted with forest, we could see a total sequestration value of ~1,800 mte per year.

CWG 2023 audited inventories results

In 2023 we completed our second audit. Our process was greatly improved in particular with the adoption of a new inventory database (NorthStar) and the establishment of Standard Operating Procedures. Our measurements are more accurate, and our understanding of the different emission



categories is deeper. We've covered more sources of emissions and are thinking about other sources that have not been covered in the past such as:

- Wax for bottle necks
- Crop protection chemicals
- Purchased compost for vineyard
- Capital expenditure
- Tasting room merchandise
- Outside services such as warehousing, repair services and data storage
- Waste stream (food waste, electronic waste)

Our production in 2023 was considerably higher (2021 was a drought year) with 4.6 million liters made versus 3.75 in 2021 (+23%). Despite the rise in total emissions and better accounting, our emission intensity was lower in 2023 than in 2021: from 1.91 Kg CO₂/liter of wine to 1.88 representing a 1.5% reduction in emissions. To stay on pace with our zero-emission goal we need to get closer to 7% every other year to stay on track. Our slow progress highlights the difficulties getting to zero emissions. Below is a table summarizing our audited 2023 emissions against our base line year:

Scope	Category of emission	2021 Base Year mt CO ₂	2023 Audited mt CO ₂	Comments
Scope 1	Fossil Fuel uses	617	671	+8%
	Vineyard practices	369	148	-60%
	On site waste treatment	116	225	+94% more accurate accounting
	Refrigerant use	97	458	+472% Refrigerant purchase in 2023
	TOTAL SCOPE 1	1,203	1,502	+25%
Scope 2	Electricity purchased	492	205	Change of emission factor
Scope 3 (75%) Supplier & Customer emissions = 5,473 mte	Purchased products	1,888	1,857	-2%
	Packaging	1,450	2,123	+46%
	Downstream fossil fuels	743	1,202	+ 62%
	Travel and commute	381	290	-24%
	Refrigeration	445	566	+27%
	Offsite waste	277	514	+86% more accurate accounting
	Upstream fossil fuels	41	212	+517% more accurate accounting
	End of life emissions	108	73	-23%
	Fertilizer used	16	20	+ 25%
	Land conversion	4	0	-100%
	TOTAL SCOPE 3	5,568	6,993	+25.6%
	ALL SCOPES	7,163	8,700	+21.5%
	VOLUME PRODUCED	3,755 K	4,616 K	+ 22.9%
	Emission Intensity	1.91	1.88	Kg CO ₂ emitted by liter of wine produced

No accounting for insets for completed in 2023. Estimating inseting should be a priority for the measurement committee.



RTZ calculation uncertainties

Our RTZ is a 26-year journey during which certain events are predictable today while others are not.

On the predictable side, we know that we can make easy improvements such as switching high GHG emission end of life equipment to climate friendly ones. Switching to electrical vehicles, or to ammonia for cooling systems, are both good examples. The switch to electrical may be accompanied by an increase in our self-generation of energy (mostly through solar generation for our regions) and energy conservation efforts. Other predictable improvements will come from lower impact packaging choices and from the deployment of regenerative farming practices.

Yet, relying on our predictable initiatives will not be enough and we are facing uncertainty in the elimination of most of our emissions. To reach our zero-emission goal, we foresee that we will need several events to become a reality. First and foremost, we need our suppliers and our clients to do what they can to reduce their emissions. In particular, we need our packaging, grape suppliers and distributors to join our mission. We are currently sending our top suppliers a copy of the quarterly carbon council newsletter to keep them abreast of our efforts. Secondly, we need governmental help in the all-electric transition, the generation of renewable energies, and the propagation of low emission technologies. Finally, we suggest that a review of the GHG protocols should include carbon immobilization in the soil and in forested land to reflect their sequestration benefits. There are no roads to neutrality right now without taking into account insetting strategies.

The abandonment of fossil fuels and the switch to all-electric will require the production of additional electricity which we may be able to produce, or we may have to buy. We will supplement our self-generated electricity with the purchase of renewable electricity, if necessary, through the use of Renewable Energy Certificates (REC).

Finally, the current assumptions and calculations are made based on international standards. We aim to replace these standards with actual calculations that will be based on audited processes. For example, all our glass comes from domestic suppliers that have efficient furnaces. They could demonstrate that their glass production is less intensive in GHG emissions than the international standards which are based on an average. Over time, we hope to be able to partner with suppliers and clients that will be able to demonstrate their own GHG emission reduction efforts.

This document will now outline how we plan to reduce our GHG emissions for each source of emissions. This will be presented with a phase calendar of planned activity and a presentation of how we envision to execute our plan as of August 2023.

RTZ for Scope 1

Scope 1 areas	2021 GHG	Vision for RTZ	Options and details
Stationary fuel emissions	334 mte	Switch to 100% electrical	All stationery and mobile sources switched to electrical ¹
Mobile fuel emissions	283 mte	Switch to 100% electrical	



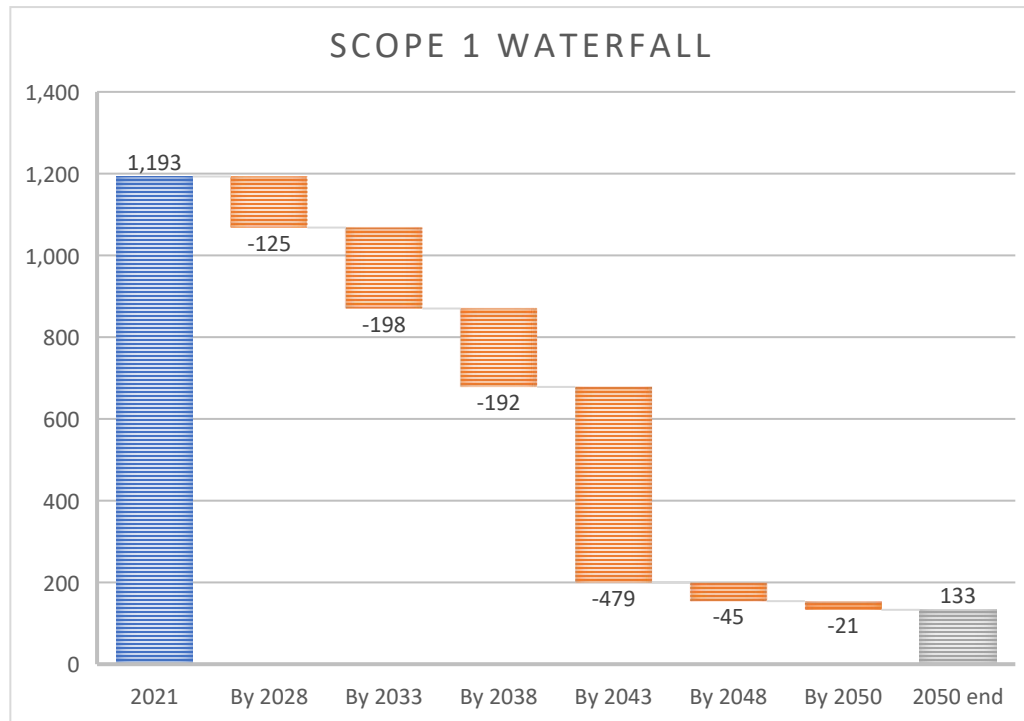
Vineyard practices	369 mte	Eliminate Fertilizer use and hope for change in UN GHG protocol for soil emission	Soil emission study starts 2025 ²
On site waste treatment	116 mte	Eliminate wastewater streams and increase composting	Increase use of compost instead of using landfill (eliminate scope 3) Reduce the use of water Reuse wastewater for irrigation
Refrigerants	97 mte	Eliminate high emission refrigerants & switch to ammonia cooling	

¹ Natural gas is primarily used for boilers, propane for isolated equipment (frost fans), and diesel for tractors. All the equipment must be replaced by an electrical alternative starting 2026. Our pace will be dictated by equipment obsolescence. One exception will be our back-up diesel generators that are used in emergency situations only.

² Building soil organic matter in the next 10 years will be important to ween ourselves off fertilizer. We will learn from the USDA sponsored soil study, in which we will participate, and this will hopefully lead to a review of soil emissions to reflect the sequestration in our soils. We expect, conservatively, that soil sequestration will at least offset soil emissions.

			Baseline	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	RESIDUAL
Scope	Source	Detailed source	2021	By 2028	By 2033	By 2038	By 2043	By 2048	By 2050	2050 end
Scope 1		Natural gas	167	-40	-80	-47				0
Scope 1	Stationary fuel emissions	propane	151	-15	-30	-30	-30	-30	-16	0
Scope 1		Diesel	15				-15			0
Scope 1		All gas/diesel vehicle to electric	150	-50	-50	-50				0
Scope 1	Mobile fuel emissions	All tractors to electric	115	-15	-15	-50	-35			0
Scope 1		All Forklifts to electric	13		-13					0
Scope 1		Elimination of fertilizer	15				-15			0
Scope 1	Vineyard practices	Soil emissions	354				-354			0
Scope 1	On site waste treatment	Zero waste and composting	116	-5	-5	-5	-5	-5	-5	86
Scope 1	Refrigerants		97		-5	-10	-25	-10		47





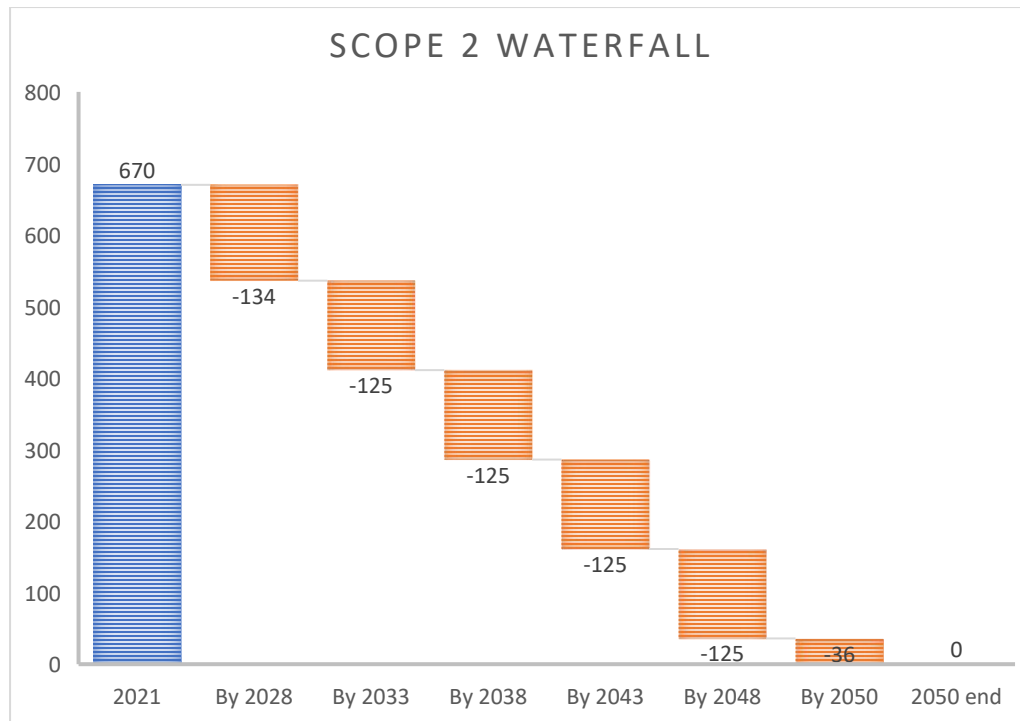
RTZ for scope 2

Scope 2 area	2021 GHG	Vision for RTZ	Options and details
Purchased electricity	670 mte	100% self-generated; reinforced with conservation efforts	Replace all equipment with energy efficient when obsolete Deploy solar panels ³ Explore REC

³ Speed and scope of deployment may be greatly affected by government incentives

			Baseline	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	RESIDUAL
Scope	Source	Detailed source	2021	By 2028	By 2033	By 2038	By 2043	By 2048	By 2050	2050 end
Scope 2	Bought electricity	Solar panels install impact	670	-134	-125	-125	-125	-125	-125	-36
										0





Focus on self-generated renewable energies in Phase 2: Our goal is to generate 20% of the electricity we need to operate Crimson Wine Group properties by 2029. Below is a table describing our planned improvement for Phase 2 (2025-2029).

Location and added production	Renewable energy deployment for phase 2: 2025 through 2029				
	2025	2026	2027	2028	2029
<u>CHV</u> 72,700 kWh	STUDY	INSTALL			
<u>SFV</u> 167,300 kWh	STUDY	INSTALL		STUDY	INSTALL
<u>PRV</u> 103,000 kWh			STUDY	INSTALL	
<u>ASW</u> 55,600 kWh	STUDY	INSTALL			
<u>DCV</u> 128,000 kWh		STUDY	INSTALL		
<u>SHW</u> 24,500 kWh	STUDY	INSTALL			

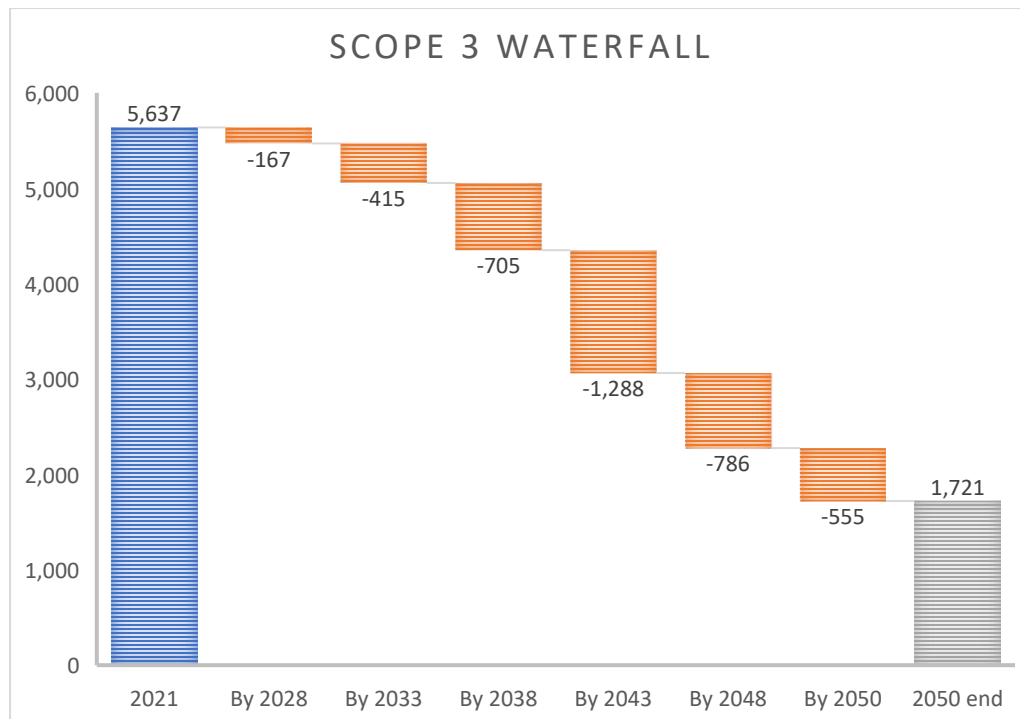


RTZ for scope 3

Scope 3 areas	2021 GHG	Vision for RTZ	Options and details
Purchased products	1,835 mte	Optimize purchases and work with suppliers	Avoid any wasted supplies – purchase only what we need Eliminate unnecessary supplies (draft a list?) Select suppliers that are working towards net zero
Packaging	1,450 mte	Reduce use of packaging and consider alternatives	Continue to lightweight our glass Eliminate use of foils Eliminate repacking Explore alternative packaging
Downstream fossil fuels	744 mte	Switch to lower emission transport and lighten up packaging	Use train and sea whenever possible Avoid overnight/emergency shipping Consolidate shipments to reduce quantity of small parcels Continue to lightweight glass and explore lighter packaging alternative options
Travel and commute	381 mte	Switch to electrical vehicles and minimize travel	Incentivize employees to switch to electrical vehicles Offer rideshares for employees Offer charging stations for visitors Offer remote work opportunities 4-day work week for employees on site Help in the establishment of a decarbonized transportation system in wine country Minimize air travel and incentivize use of trains Use more videoconferencing
Refrigeration	445 mte	Reduce storage temperatures	Study maximum allowable storage temperatures Decarbonization of supply chain temperature control
Offsite waste	314 mte	Reduce waste	Follow the regular Reduce, Reuse, Recycle model Choose compostable materials Eliminate all plastic waste at wineries
Upstream fossil fuels	184 mte		Suppliers switch to electric fleets Buy supplies closer to our facilities Consider central bottling at our own facility Bottling at destination is an option
End of life emissions	108 mte	Follow the 3R	Make sure all packaging is as light as possible (Reduce), can be reused or recycled
Fertilizer used	16 mte	Eliminate purchased fertilizer	Switch all acreage to regenerative practices
Land conversion	4 mte	Minimize land conversion	Do not remove forests



			Baseline	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	RESIDUAL
Scope	Source	Detailed source	2021	By 2028	By 2033	By 2038	By 2043	By 2048	By 2050	2050 end
Scope 3	Purchased products	Grapes	1,835		-100	-100	-500	-500	-500	135
Scope 3	Purchased products	Wine	93			-10	-10			73
Scope 3	Purchased products	Barrels	74		-5		-5			64
Scope 3	Purchased products	Municipal water	11							11
Scope 3	Purchased products	Winemaking gases	24				-24			0
Scope 3	Purchased products	Winemaking products	10			-1	-1	-1		7
Scope 3	Purchased products	Custom bottling	30			-30				0
Scope 3	Packaging	Bottles	953	-146	-50	-50	-50	-50	-50	557
Scope 3	Packaging	Capsules	26	-1	-5	-5	-15			0
Scope 3	Packaging	Corks	33							33
Scope 3	Packaging	Knock Down boxes	176			-15				161
Scope 3	Packaging	Box partitions	98			-3				95
Scope 3	Packaging	Screwcaps	78							78
Scope 3	Downstream fossil fuels		744		-50	-150	-300	-50		194
Scope 3	Travel and commute		381	-10	-50	-75	-75	-75		96
Scope 3	Refrigeration		445		-50	-50	-100	-100		145
Scope 3	Offsite waste		314	-10	-100	-100	-104			0
Scope 3	Upstream fossil fuels		184			-90	-94			0
Scope 3	End of life emissions		108		-5	-10	-10	-10	-5	68
Scope 3	Fertilizer used		16			-16				0
Scope 3	Land conversion		4							4



Focus on purchased products

Purchased products area	Area of Focus	Options and details
Grapes	Incentivize suppliers to do carbon accounting	Growers can be incentivized to reforest Carbon soil sequestration will help Incentivize techniques for our growers (regenerative?)
Wines	Incentivize suppliers to do carbon accounting	
Barrels	Limit use of barrels	Consider domestic sourcing Domestic assembling (vs France) may help
Municipal water	Reduce by reusing wastewater. At some CWG sites this may cancel out emissions related to municipal water purchased.	Improvements must be made to facilities to ensure water is clean for landscape watering. An additional layer of reporting may be required of the Regional Water Control Board
Winemaking gases	Eliminate the use of CO2	Consider deployment of nitrogen generators
Winemaking products	Reduce use of winemaking products	Consider local sources for additives Eliminate unnecessary materials and products
Custom bottling	Eliminate custom bottling	Bring all bottling to an efficient, well placed central bottling location (in process for 85% of our production)

Focus on packaging

Packaging area	Area of Focus	Options and details
Container	Reduce weight of packaging	All bottles to lightweight glass (below 420 g) Alternative packaging use Consider reusable packaging
Box Partitions + Knock-down Boxes	Switch to recycled cardboard	Eliminate repacking No repackaging and waste of packaging
Capsules	Eliminate use of capsules	
Pallets	Use plastic/reusable pallets or eliminate pallets	
Labels	Insignificant – reduce material use	
Wax	Limit or eliminate usage	Discuss with Marketing



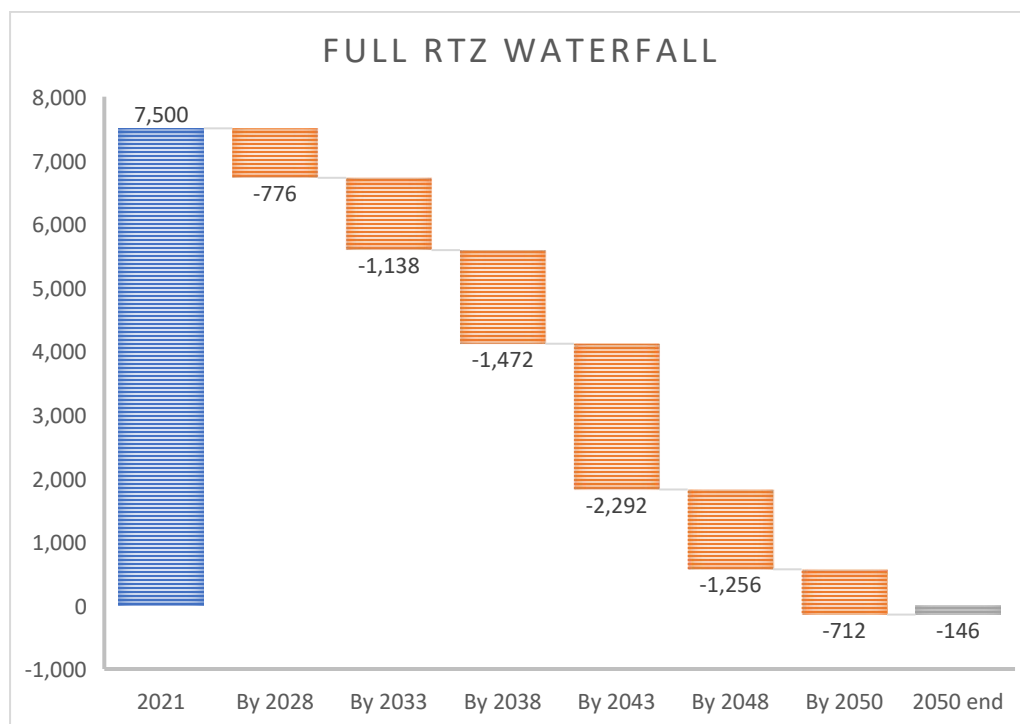
A note on our lightweight glass journey

Fiscal year	Average bottle weight	GHG emission savings from previous fiscal year
2018	575 grams	
2019	503 grams	- 123 mte
2022	479 grams	- 51 mte
2023	449 grams	- 68 mte
2024	450 grams	+ 4 mte
2028 target	400 grams	- 146 mte

PLACE HERE IMPACT ON GHG EMISSION OF ALTERNATIVE PACKAGING AND OFFER SOLUTIONS

RTZ summary for all scopes

The waterfall below gathers all scopes per phase and an assumption of the impact of forest sequestration on our land. With our current assumptions, our business will be carbon negative by 146 mte by 2050.



Crimson internal measures to ensure adherence to plan

- Annual review of the 5-year plan allowing for changes and incorporation of new technologies
- All subcommittees study this document and align to it
- Document outlining purchasing and weighing in the carbon footprint of the proposed purchases
- Yearly GHG emission inventory – audited every other year



DISCLAIMER AND FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements about Crimson Wine Group Ltd.'s ("Crimson" or the "Company") future financial performance and business. Because forward-looking statements are based on our current expectations and assumptions regarding the future, they are subject to inherent risks and uncertainties. Do not unduly rely on forward-looking statements as actual results could differ materially from expectations. Forward-looking statements speak only as of the date made, and we do not undertake to update them to reflect changes or events that occur after that date.

For more information about factors that could cause actual results to differ materially from expectations, refer to our reports filed with the Securities and Exchange Commission, including the "Forward- Looking Statements" discussion in Crimson's most recent Quarterly Report on Form 10-Q as well as to Crimson's other reports filed with the Securities and Exchange Commission, including the discussion under "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022, available on Crimson's website at www.crimsonwinegroup.investorroom.com/sec-filings.

While this document describes events, including potential future events that may be generally significant in the context of our climate action priorities and related activities, any such significance does not necessarily equate to the level of materiality of disclosures required under U.S. federal securities laws.

This document should not be used as a basis for trading in the securities of the Company or for any other investment decision and should not be construed as consisting of investment advice. The Company is not providing any financial, economic, legal, accounting, or tax advice or recommendations. This document reflects certain positions and approaches to climate action as of the date of this document that are subject to change at any time in the Company's sole discretion without notice, and we do not undertake to update this document to reflect any such changes.

Information contained herein is sourced from a variety of internal and external sources and may be based on emerging or evolving practices. In addition, disclosures related to environmental sustainability, including disclosures related to the Company's resource consumption and greenhouse gas emissions, as well as certain internal estimates and assumptions, are based in part on third-party data. Uncertainties, inaccuracies or omissions in any of these inputs potentially have compounding effects on the accuracy and completeness of resulting emissions and resource consumption figures. The suitability of the design and effectiveness of the third-party systems and associated controls over the accuracy and completeness of the data has not been independently assessed. Accordingly, the Company makes no representations or warranties as to the quality, completeness, accuracy, or fitness for a particular purpose and shall not be liable for any use by any party of, for any decision made or action taken by any party in reliance upon, or for any inaccuracies or errors in, or omissions from, such data. GHG-Protocols require restatement if better information yields materially different base year emissions. Since methodologies and approaches continue to evolve, information we are currently disclosing could later potentially yield materially different emissions and may result in restatement. Other than as stated herein, the Company does not undertake any duty to restate or correct data should such information later prove to be incorrect.

This document provides general information regarding a number of the Company's policies, procedures, and positions relating to climate action issues. Although this document aims to present the general position of the Company, the policies, procedures, and positions discussed herein may be subject to approved exceptions.



All third-party trademarks or brand names are the property of their respective owners. The use of any third-party trademarks or brand names is for informational purposes only and does not imply an endorsement by the Company or that such trademark owner has authorized Crimson to promote its products or services. The Company disclaims any representations or warranties regarding the non-infringement of any information contained herein.

