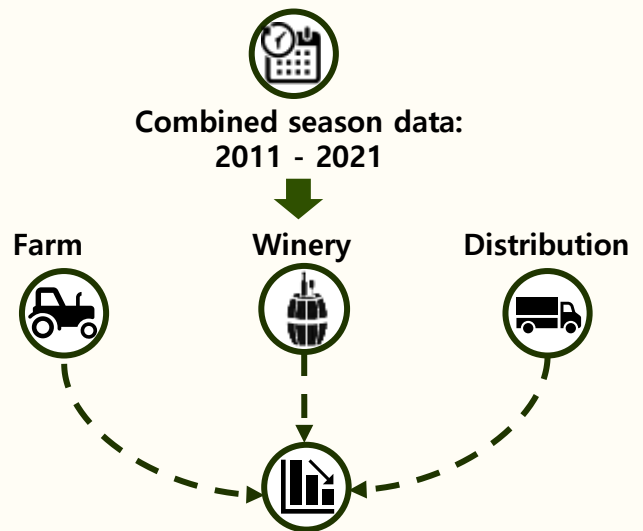


South African Wine Grapes

Introduction

The 2022 Confronting Climate Change (CCC) industry benchmark process builds on 2020 - 2021 datasets and provides a meaningful platform for the South African fruit and wine industries to improve their understanding of the use of fossil fuel-based resources and to reduce emissions over time.

The ten years combined season data (2011 - 2021) for wine grapes were used for the assessment and analysed based on the following business boundaries: farm, winery and distribution. The farm and winery boundaries are presented in this report.



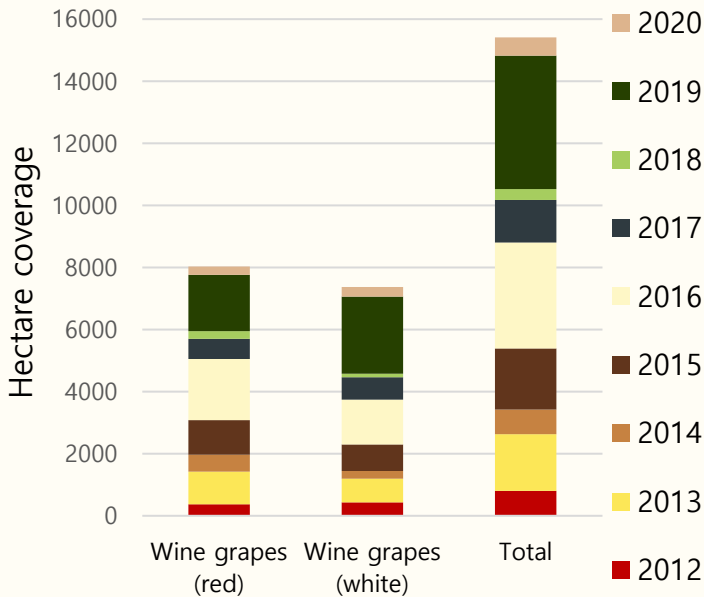
About the benchmark data

The CCC benchmark reports use combined season data from 2011 - 2021 to provide an industry-specific CO₂e benchmark. Users who calculate their carbon footprint using the CCC online carbon calculator have the option to submit their data for grading. This grading is undertaken by the CCC technical team who work with the user to ensure that all data is correctly entered and accurately reflects the entity's operations. To ensure the quality and accuracy of the benchmark results, only graded datasets are included in the benchmark calculation.

The benchmark values are determined using the mean value of graded datasets in the CCC database. Values falling beyond 1.5 times the standard deviation of the mean of the normally distributed dataset are considered outliers and are excluded from the benchmark calculation. All results are shown in the internationally accepted format of **kilograms of carbon dioxide equivalent per unit (kg CO₂e/kg fruit)**. Please note that the carbon footprint between various fruit types or commodities should not be compared. Different commodities are functionally different and require different inputs. For example, more water might be needed by one commodity than another and therefore more electricity will be needed for the pumping of water. For more information, please contact the CCC Initiative (www.climatefruitandwine.co.za).

Which regions participate in the CCC Initiative?

From 2011 to 2021 the CCC database (incl. graded + ungraded data) has grown to cover **15 407** unique hectares of wine grape farms in South Africa. This represents **17%** of the wine grape industry in the country.

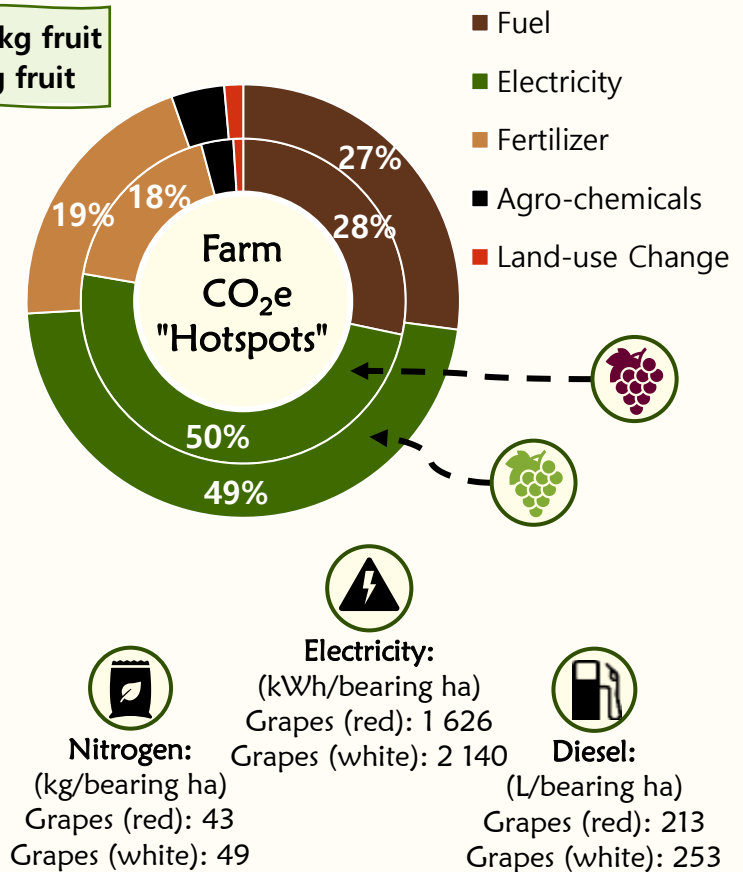
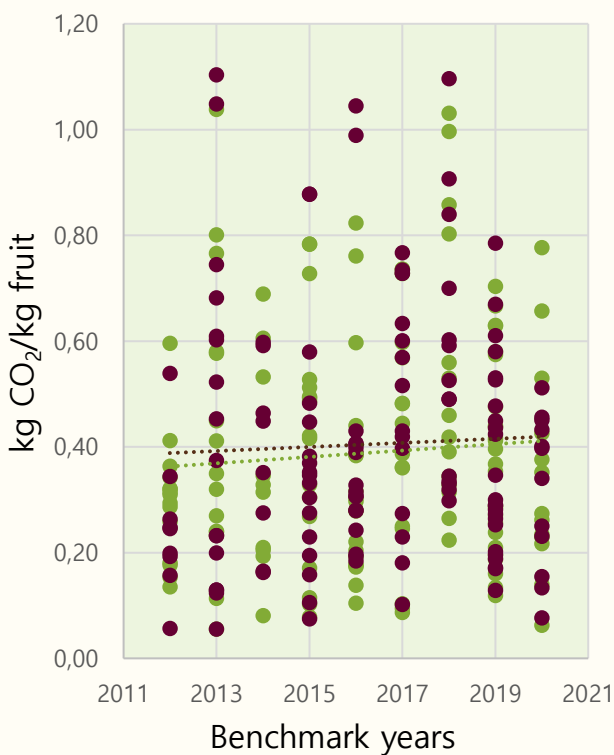


Region	Industry Ha	CCC Ha	%
Stellenbosch	15 085	7 201	48%
Klein Karoo	2 181	617	28%
Swartland	12 344	2 075	17%
Breedekloof	12 714	1 683	13%
Robertson	12 801	1 508	12%
Paarl	14 742	1 529	10%
Worcester	6 651	552	8%
Northern Cape	3 463	113	3%
Olifants River	9 403	130	1%



Farm CO₂e Benchmark

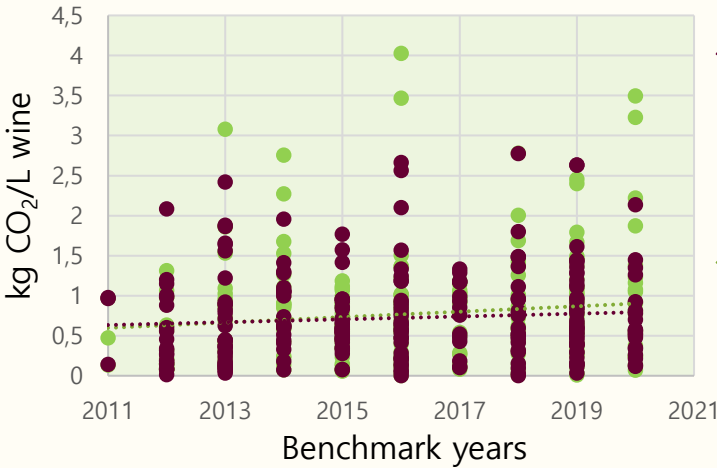
Wine grapes (white): 0.39 kg CO₂e/kg fruit
Wine grapes (red): 0.40 kg CO₂e/kg fruit





Winery CO₂e Benchmark

From 2011 to 2021 the CCC database (incl. graded + ungraded data) has grown to cover **206** wineries. This represents **39%** of the wine cellars in the country.



Red wine: 0.72 kg CO₂e/L wine

Processing: 0.57 kg CO₂e/L wine
Bottling: 0.91 kg CO₂e/L wine



White wine: 0.77 kg CO₂e/L wine

Processing: 0.65 kg CO₂e/L wine
Bottling: 0.93 kg CO₂e/L wine



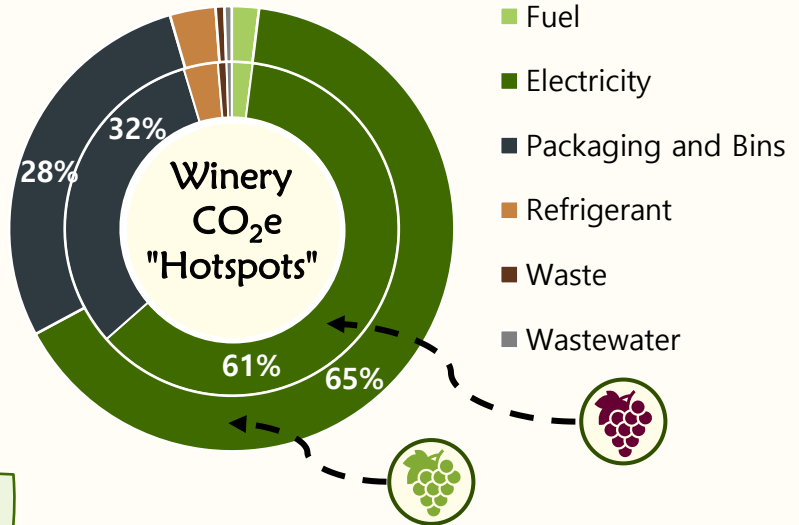
Electricity is the highest contributor to winery CO₂e emissions, followed by **Packaging and Bins**.

Electricity – Processing

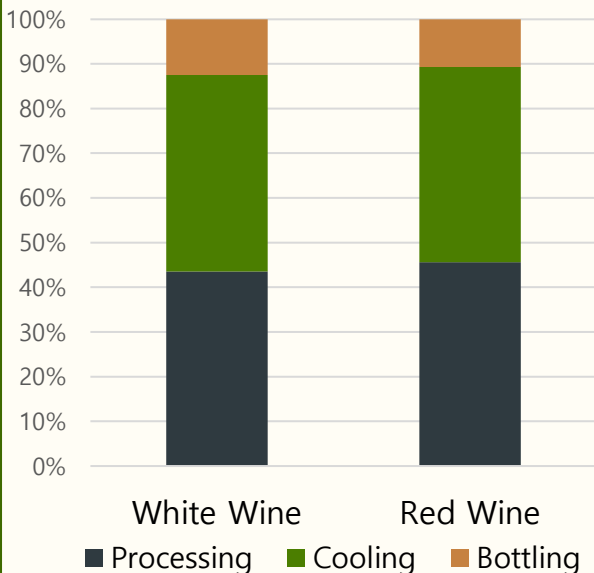
Red wine: 172 kWh/ton grapes processed
White wine: 205 kWh/ton grapes processed

Electricity – Cooling

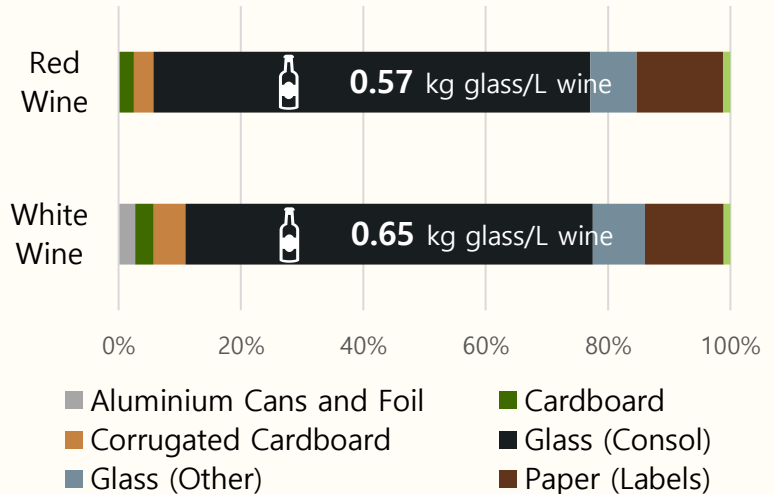
Red wine: 251 kWh/ton grapes processed
White wine: 285 kWh/ton grapes processed



Where do the Electricity CO₂e emissions come from?



Where do the Packaging CO₂e emissions come from?



CCC Carbon Heroes

We present the Carbon Heroes of the South African Wine and Fruit Industry!

www.carbonheroes.co.za

CCC is proud to announce that we have launched a new carbon footprint label and website – www.carbonheroes.co.za – where our B-graded license holders are recognised for meticulously calculating their carbon footprint. They are the Carbon Heroes of the South African Wine and Fruit Industry!

This opportunity is presented free of charge and provides recognition to all our farmers and/or businesses by being awarded with either a one year or three year label.



1 Year Label

I calculate my carbon footprint and have my data sense checked against industry norms and values.



3 Years Label

I have calculated my carbon footprint for three consecutive years or more and have my data sense checked.



Project Partners



Disclaimer: The results shown in this report represent the approved data points of the CCC wine grape sample group representing combined data from the ten-year seasonal period of 2011-2021. In line with the leading international carbon footprinting protocol of PAS 2050-1:2012, a three-year period is required to reflect seasonal and production variances. The data range now covers the required three-year period, and therefore accounts for seasonal and production variances. However, the data range of the sample is not yet representative of the industry at large. Due to this consideration, the results should NOT be distributed on behalf of or representing the South African wine grape industry. It is aimed to be used as an internal evaluation exercise for those South African producers and exporters wanting to compare their carbon footprint results with the CCC regional sample group averages. This report has been compiled by Blue North Sustainability (Pty) Ltd. Author & design: Carina Wessels. Data analysis: Karlien Heyns. Reviewed: Anel Blignaut. For more information please contact the CCC Project Manager, Carina Wessels, at carina@bluenorth.co.za.