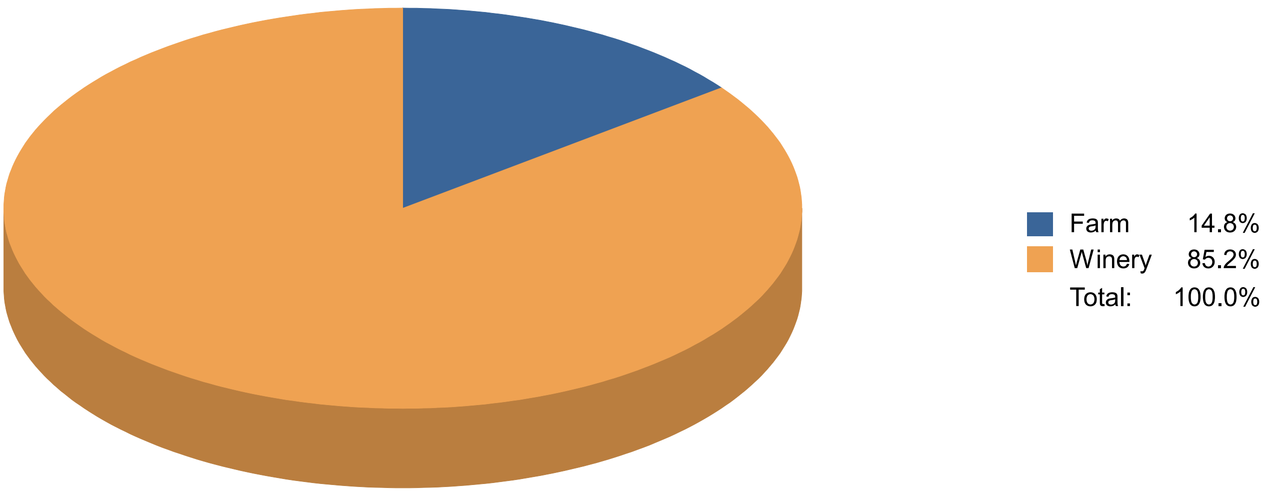
Carbon Calculator Results

Business Name: Villiera Wines
Country Name: South Africa
Creation Date: 2024/04/15 17:02:08
Data Collection Period: Jan 2023 to Dec 2023
Report Grade: B1 - This dataset has been checked by CCC and is part of the benchmark.

Business Unit - Boundary View



Boundary	Ton CO2e	%
Farm	220.63	14.79
Winery	1,270.64	85.21
Total	**1,491.27**	**100.00**

The Carbon Calculator must be completed on an annual basis. This allows users to monitor their carbon footprint trend and analyse improvements.

Business Name:	Villiera Wines
Dataset:	2024/04/15 17:02:08
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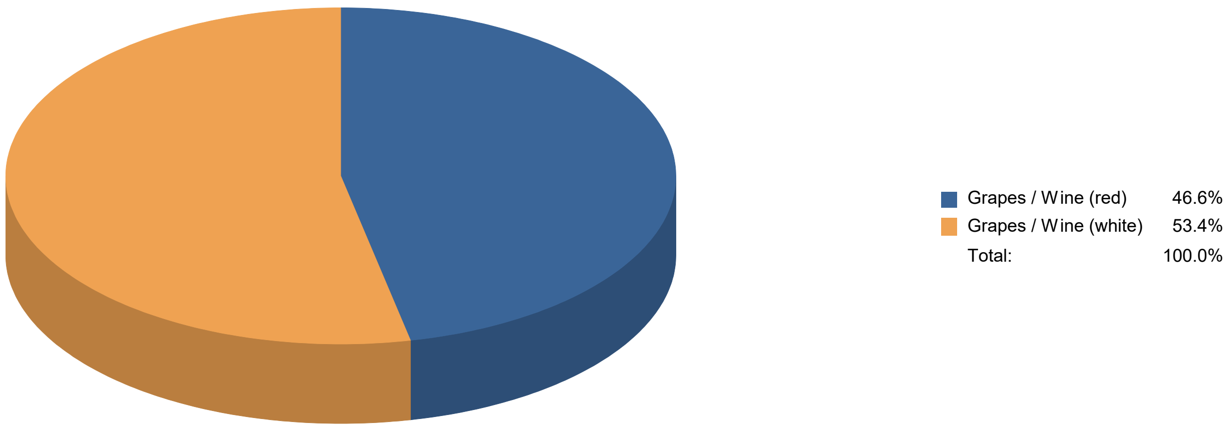
Business Unit - Commodity View



Commodity	Ton CO2e	%
Grapes / Wine (red)	694.74	46.59
Grapes / Wine (white)	796.53	53.41
Total	**1,491.27**	**100.00**

Business Name: Villiera Wines

Dataset: 2024/04/15 17:02:08

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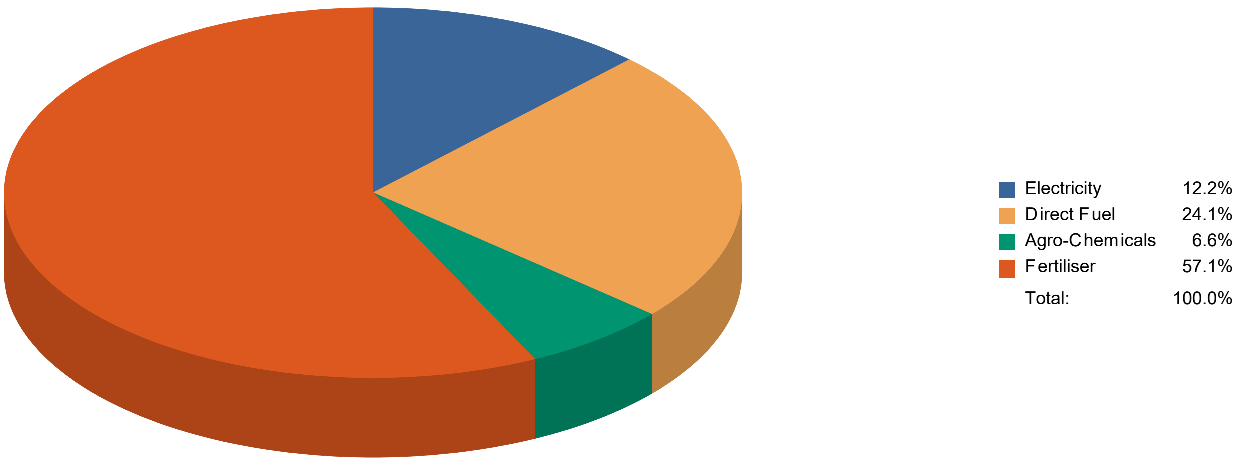
Farm - Emission Source View



Emission Source	Ton CO2e	%
Electricity	26.85	12.17
Direct Fuel	53.15	24.09
Agro-Chemicals	14.55	6.60
Fertiliser	126.08	57.14
Total	**220.63**	**100.00**

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Farm Commodity Benchmark

Commodity	Kg CO2e per Kg Fruit	Benchmark
Grapes / Wine (red)	0.16	The CCC regional average is 0.26 Kg CO2e per Kg Fruit and consist of 79 data points.
Grapes / Wine (white)	0.17	The CCC regional average is 0.27 Kg CO2e per Kg Fruit and consist of 74 data points.

Farm Hectare Breakdown

Commodity	Ton CO2e per Bearing Ha
Grapes / Wine (red)	1.40
Grapes / Wine (white)	1.39

Farm Scope Breakdown

	Ton CO2e	%
Scope 1	126.89	57.51
Scope 2	26.48	12.00
Scope 3	67.26	30.49
Total	**220.63**	**100.00**

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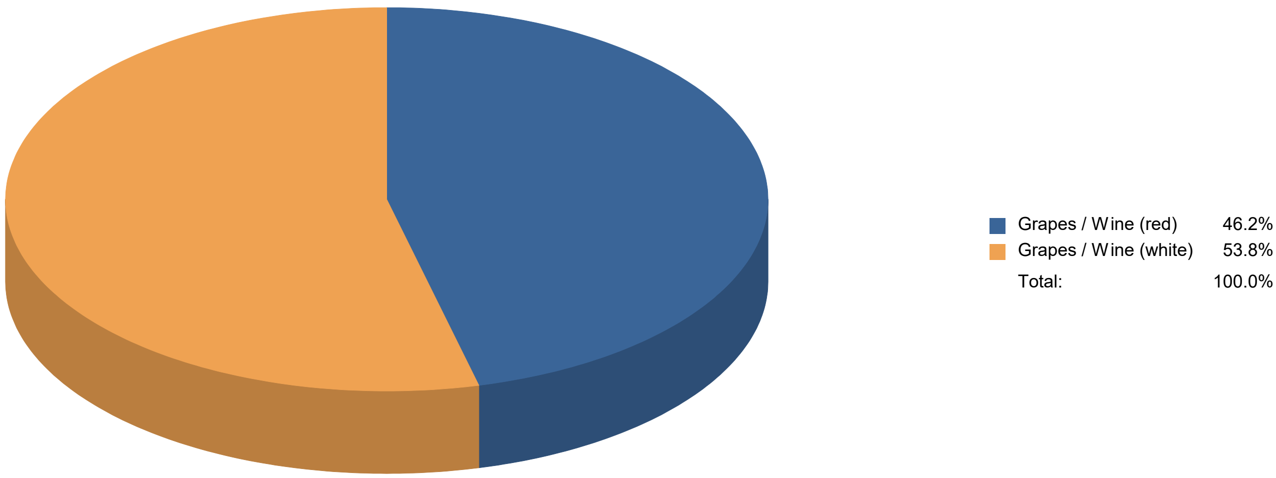
Farm - Commodity View



Commodity	Ton CO2e	%
Grapes / Wine (red)	101.85	46.16
Grapes / Wine (white)	118.78	53.84
Total	**220.63**	**100.00**

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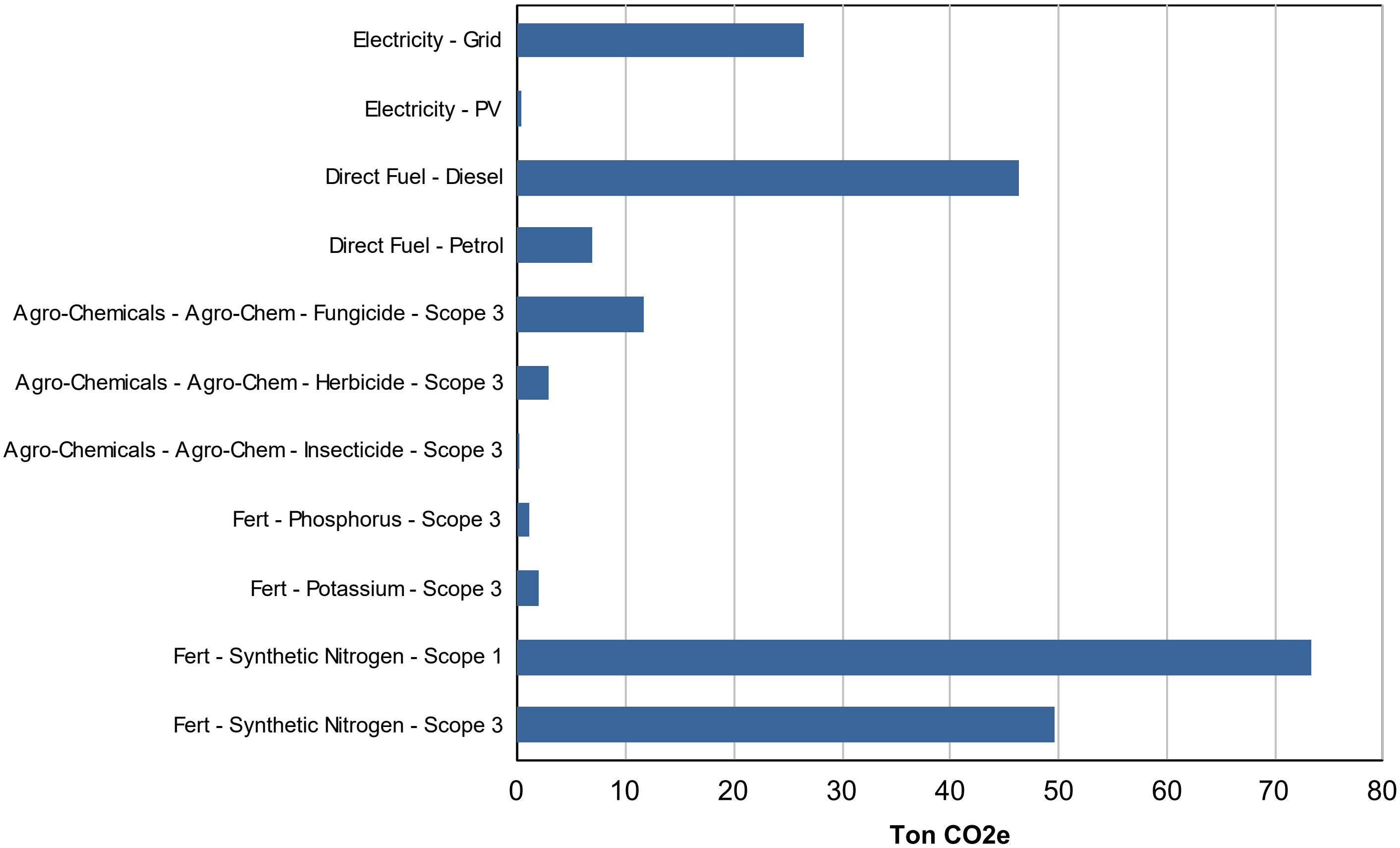
Farm - Emission Source Breakdown



Emission Source	Ton CO2e	%
Electricity - Grid	26.48	12.00
Electricity - PV	0.37	0.17
Direct Fuel - Diesel	46.28	20.97
Direct Fuel - Petrol	6.87	3.11
Agro-Chemicals - Agro-Chem - Fungicide - Scope 3	11.57	5.24
Agro-Chemicals - Agro-Chem - Herbicide - Scope 3	2.81	1.27
Agro-Chemicals - Agro-Chem - Insecticide - Scope 3	0.17	0.08
Fert - Phosphorus - Scope 3	1.07	0.49
Fert - Potassium - Scope 3	1.99	0.90
Fert - Synthetic Nitrogen - Scope 1	73.37	33.25
Fert - Synthetic Nitrogen - Scope 3	49.65	22.50

Total	**220.63**	**100.00**

Business Name: Villiera Wines

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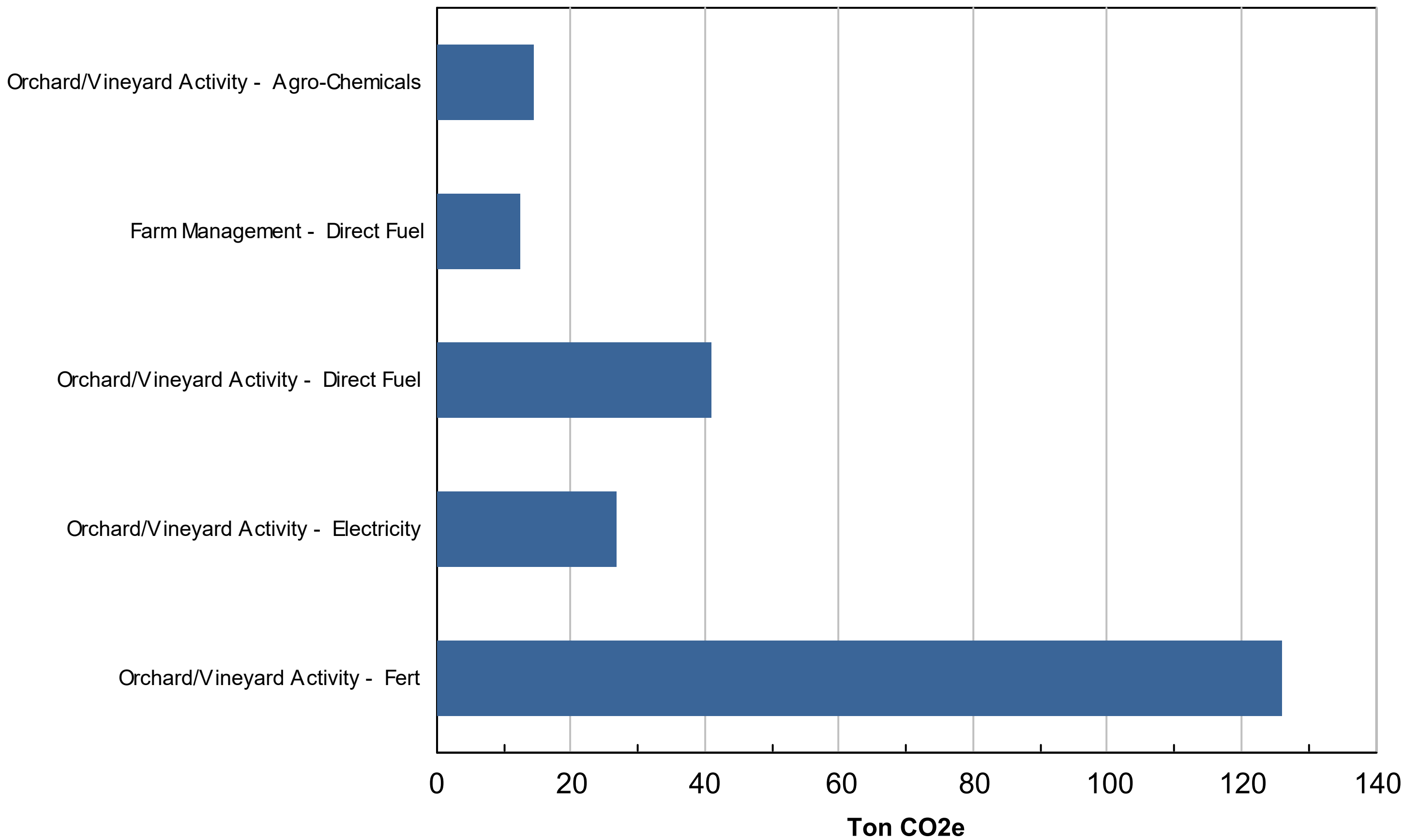
Farm - Activity Breakdown



Activity Breakdown	Ton CO2e	%
Orchard/Vineyard Activity - Agro-Chemicals	14.55	6.60
Farm Management - Direct Fuel	12.38	5.61
Orchard/Vineyard Activity - Direct Fuel	40.77	18.48
Orchard/Vineyard Activity - Electricity	26.85	12.17
Orchard/Vineyard Activity - Fert	126.08	57.14
Total	**220.63**	**100.00**

Business Name: Villiera Wines

Dataset: 2024/04/15 17:02:08

Data Collection Period: Jan 2023 to Dec 2023

Detailed Carbon Emissions Breakdown

Detailed Activities	Ton CO2e	%
Electricity - Grid - Orchard/Vineyard Activity - BO	26.48	12.00
Electricity - PV - Orchard/Vineyard Activity - BO	0.37	0.17
Direct Fuel - Diesel - Orchard/Vineyard Activity - BO	40.77	18.48
Direct Fuel - Diesel - Farm Management	5.51	2.50
Direct Fuel - Petrol - Farm Management	6.87	3.11
Fert - - Synthetic Nitrogen - Orchard/Vineyard Activity - BO	123.01	55.76
Fert - - Phosphorus - Orchard/Vineyard Activity - BO	1.07	0.49
Fert - - Potassium - Orchard/Vineyard Activity - BO	1.99	0.90
Agro-Chemicals - Agro-Chem - Fungicide - Orchard/Vineyard Activity - BO	11.57	5.24
Agro-Chemicals - Agro-Chem - Insecticide - Orchard/Vineyard Activity - BO	0.17	0.08
Agro-Chemicals - Agro-Chem - Herbicide - Orchard/Vineyard Activity - BO	2.81	1.27
Total	**220.63**	**100.00**

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Farm Consumption Benchmarks

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (red)	kL Water per Ton Fruit	102.10	The CCC regional average is 172.04 kL Water per Ton Fruit and consist of 69 data points.
Grapes / Wine (red)	kL Water per Bearing Ha	903.24	The CCC regional average is 1391.53 kL Water per Bearing Ha and consist of 69 data points.
Grapes / Wine (red)	kWh Orchard / Vineyard Electricity per Ton Fruit	26.03	The CCC regional average is 159.63 kWh Orchard / Vineyard Electricity per Ton Fruit and consist of 69 data points.
Grapes / Wine (red)	kWh Orchard / Vineyard Electricity per Bearing Ha	230.28	The CCC regional average is 996.17 kWh Orchard / Vineyard Electricity per Bearing Ha and consist of 69 data points.
Grapes / Wine (red)	Liters Orchard / Vineyard Diesel per Ton Fruit	8.79	The CCC regional average is 25.97 Liters Orchard / Vineyard Diesel per Ton Fruit and consist of 69 data points.
Grapes / Wine (red)	Liters Orchard / Vineyard Diesel per Bearing Ha	77.81	The CCC regional average is 199.35 Liters Orchard / Vineyard Diesel per Bearing Ha and consist of 69 data points.
Grapes / Wine (red)	Kg Pure N per Ton Fruit	6.24	The CCC regional average is 3.70 Kg Pure N per Ton Fruit and consist of 69 data points.
Grapes / Wine (red)	Kg Pure N per Bearing Ha	55.25	The CCC regional average is 27.03 Kg Pure N per Bearing Ha and consist of 69 data points.

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (white)	kL Water per Ton Fruit	83.15	The CCC regional average is 153.57 kL Water per Ton Fruit and consist of 68 data points.
Grapes / Wine (white)	kL Water per Bearing Ha	657.59	The CCC regional average is 1078.74 kL Water per Bearing Ha and consist of 68 data points.
Grapes / Wine (white)	kWh Orchard / Vineyard Electricity per Ton Fruit	29.22	The CCC regional average is 171.12 kWh Orchard / Vineyard Electricity per Ton Fruit and consist of 68 data points.
Grapes / Wine (white)	kWh Orchard / Vineyard Electricity per Bearing Ha	231.04	The CCC regional average is 1126.79 kWh Orchard / Vineyard Electricity per Bearing Ha and consist of 68 data points.
Grapes / Wine (white)	Liters Orchard / Vineyard Diesel per Ton Fruit	9.87	The CCC regional average is 35.42 Liters Orchard / Vineyard Diesel per Ton Fruit and consist of 68 data points.
Grapes / Wine (white)	Liters Orchard / Vineyard Diesel per Bearing Ha	78.06	The CCC regional average is 236.21 Liters Orchard / Vineyard Diesel per Bearing Ha and consist of 68 data points.
Grapes / Wine (white)	Kg Pure N per Ton Fruit	7.01	The CCC regional average is 4.41 Kg Pure N per Ton Fruit and consist of 68 data points.
Grapes / Wine (white)	Kg Pure N per Bearing Ha	55.42	The CCC regional average is 32.50 Kg Pure N per Bearing Ha and consist of 68 data points.

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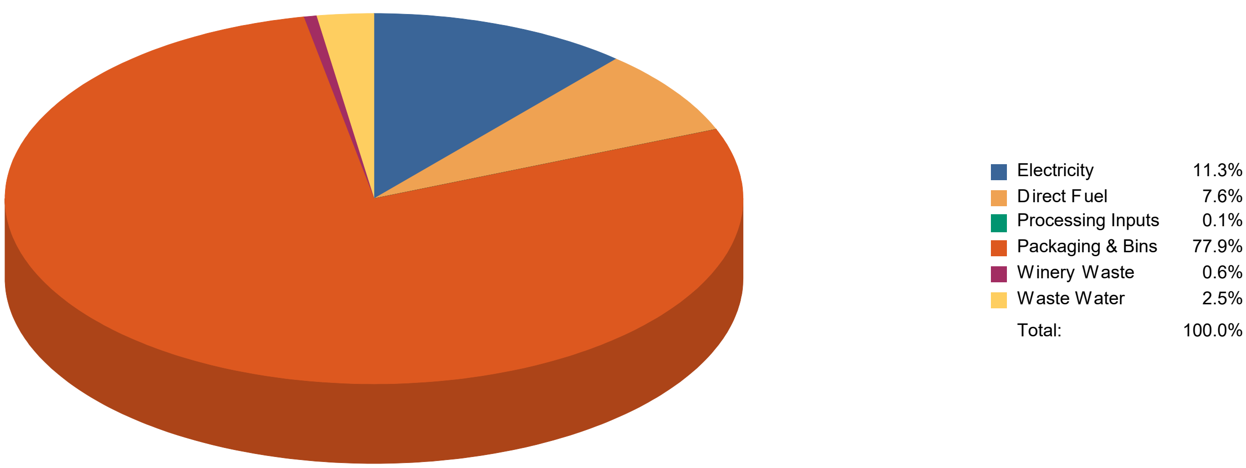
Winery - Emission Source View



Emission Source	Ton CO2e	%
Electricity	143.11	11.26
Direct Fuel	96.74	7.61
Processing Inputs	1.33	0.10
Packaging & Bins	990.40	77.95
Winery Waste	7.08	0.56
Waste Water	31.98	2.52
Total	**1,270.64**	**100.00**

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Winery Commodity Benchmark

Commodity	Kg CO2e per L Wine	Benchmark
Grapes / Wine (red) - Bottling	0.47	The CCC regional average is 0.91 Kg CO2e per L Wine and consist of 66 data points.
Grapes / Wine (red) - Processing	0.16	The CCC regional average is 0.53 Kg CO2e per L Wine and consist of 79 data points.
Grapes / Wine (white) - Bottling	0.45	The CCC regional average is 0.88 Kg CO2e per L Wine and consist of 59 data points.
Grapes / Wine (white) - Processing	0.18	The CCC regional average is 0.53 Kg CO2e per L Wine and consist of 71 data points.

Winery Scope Breakdown

	Ton CO2e	%
Scope 1	137.45	10.82
Scope 2	137.55	10.83
Scope 3	995.65	78.36
Total	**1,270.64**	**100.00**

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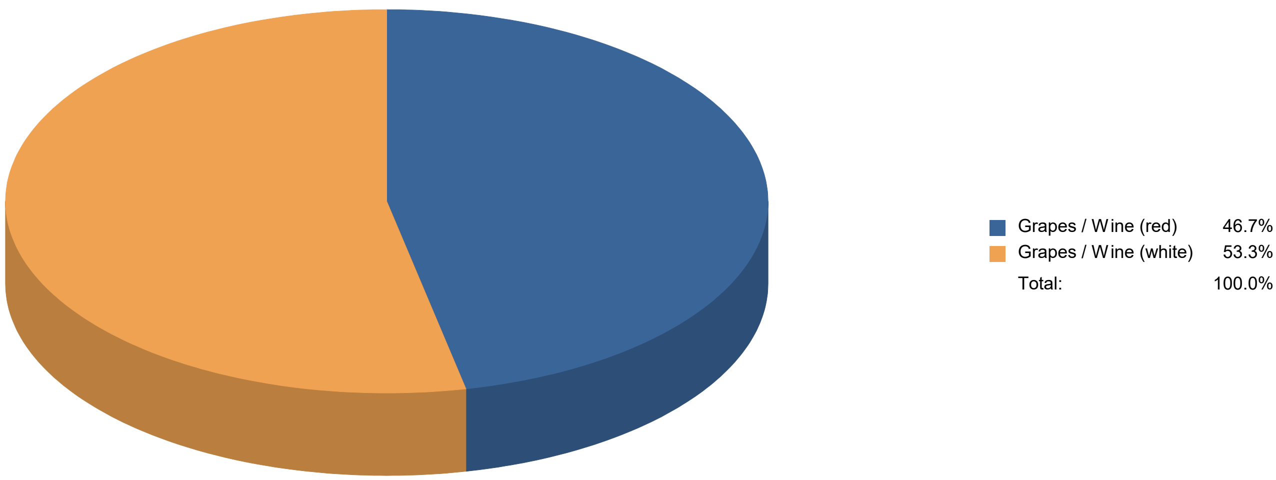
Winery - Commodity View



Commodity	Ton CO_2e	%
Grapes / Wine (red)	592.89	46.66
Grapes / Wine (white)	677.75	53.34
Total	**1,270.64**	**100.00**

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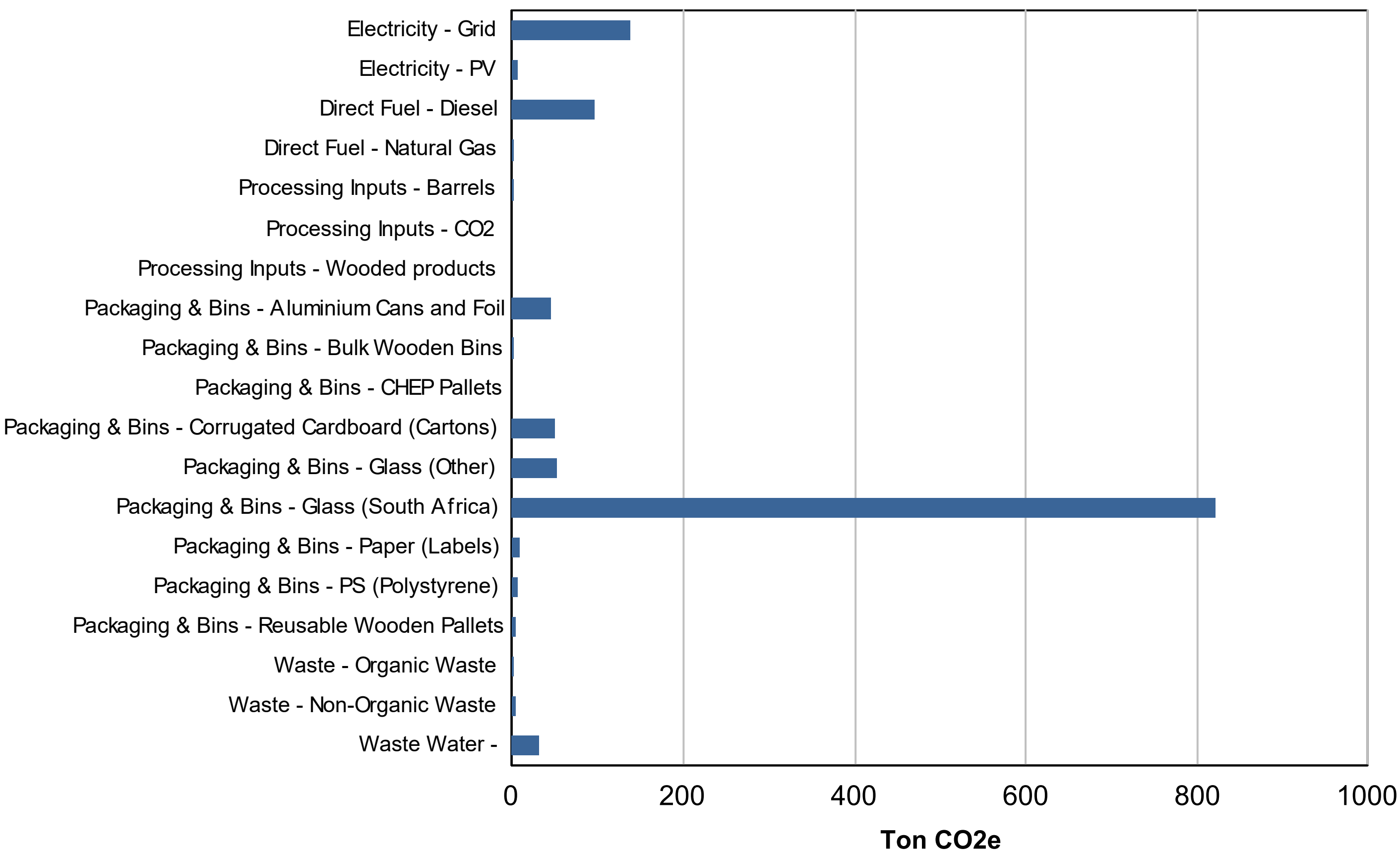
Winery - Emission Source Breakdown



Emission Source	Ton CO2e	%
Electricity - Grid	137.55	10.83
Electricity - PV	5.56	0.44
Direct Fuel - Diesel	95.84	7.54
Direct Fuel - Natural Gas	0.90	0.07
Processing Inputs - Barrels	0.58	0.05
Processing Inputs - CO2	0.47	0.04
Processing Inputs - Wooded products	0.28	0.02
Packaging & Bins - Aluminium Cans and Foil	44.91	3.53
Packaging & Bins - Bulk Wooden Bins	1.43	0.11
Packaging & Bins - CHEP Pallets	0.29	0.02
Packaging & Bins - Corrugated Cardboard (Cartons)	50.95	4.01
Packaging & Bins - Glass (Other)	52.71	4.15

Packaging & Bins - Glass (South Africa)	822.12	64.70
Packaging & Bins - Paper (Labels)	8.48	0.67
Packaging & Bins - PS (Polystyrene)	6.43	0.51
Packaging & Bins - Reusable Wooden Pallets	3.09	0.24
Waste - Organic Waste	2.69	0.21
Waste - Non-Organic Waste	4.38	0.35
Waste Water -	31.98	2.52
Total	**1,270.64**	**100.00**

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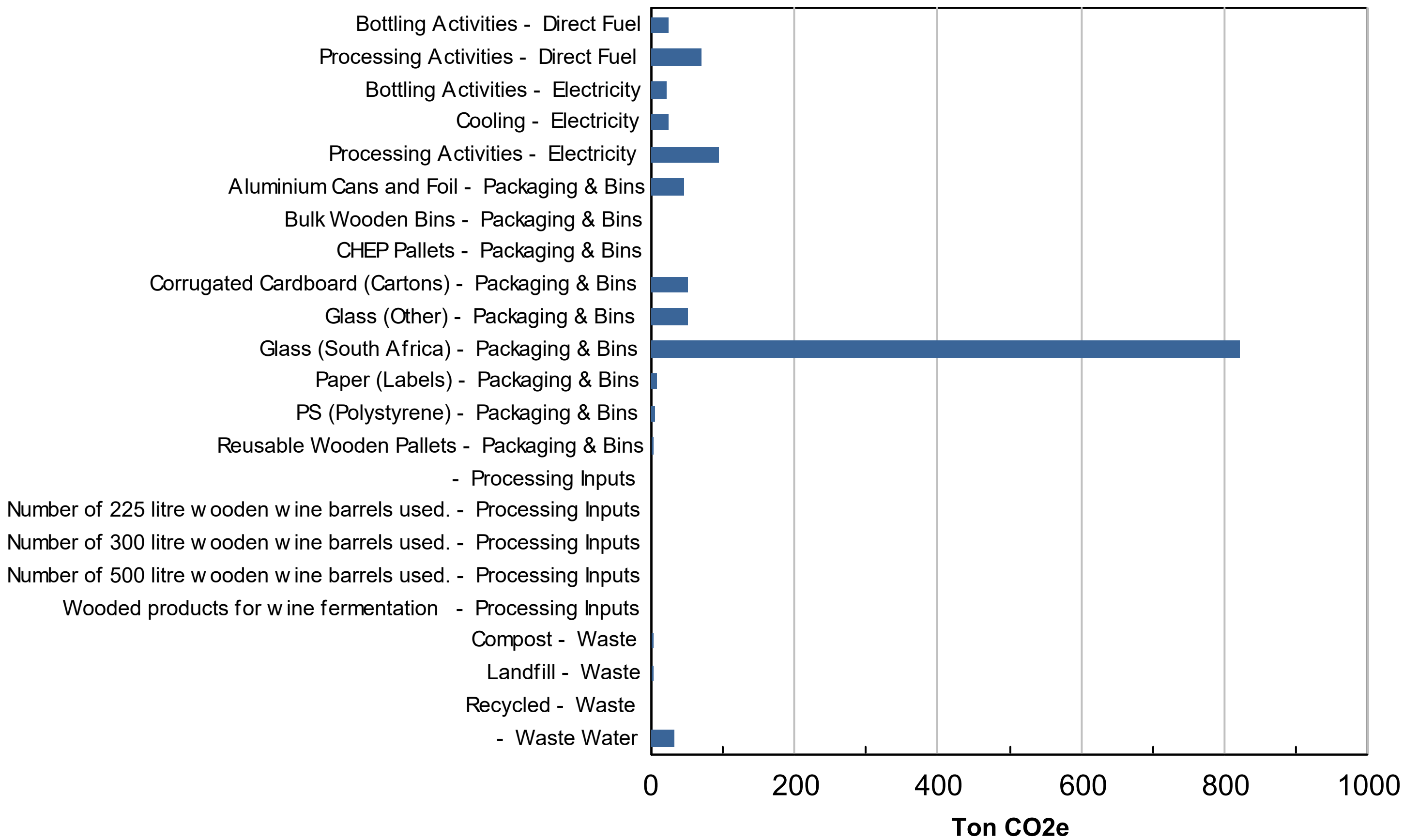
Winery - Activity Breakdown



Activity Breakdown	Ton CO2e	%
Bottling Activities - Direct Fuel	25.22	1.99
Processing Activities - Direct Fuel	71.52	5.63
Bottling Activities - Electricity	22.90	1.80
Cooling - Electricity	24.33	1.91
Processing Activities - Electricity	95.89	7.55
Aluminium Cans and Foil - Packaging & Bins	44.91	3.53
Bulk Wooden Bins - Packaging & Bins	1.43	0.11
CHEP Pallets - Packaging & Bins	0.29	0.02
Corrugated Cardboard (Cartons) - Packaging & Bins	50.95	4.01
Glass (Other) - Packaging & Bins	52.71	4.15
Glass (South Africa) - Packaging & Bins	822.12	64.70
Paper (Labels) - Packaging & Bins	8.48	0.67
PS (Polystyrene) - Packaging & Bins	6.43	0.51
Reusable Wooden Pallets - Packaging & Bins	3.09	0.24

- Processing Inputs	0.47	0.04
Number of 225 litre wooden wine barrels used. - Processing Inputs	0.34	0.03
Number of 300 litre wooden wine barrels used. - Processing Inputs	0.08	0.01
Number of 500 litre wooden wine barrels used. - Processing Inputs	0.16	0.01
Wooded products for wine fermentation - Processing Inputs	0.28	0.02
Compost - Waste	2.69	0.21
Landfill - Waste	3.28	0.26
Recycled - Waste	1.10	0.09
- Waste Water	31.98	2.52
Total	**1,270.64**	**100.00**

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Detailed Carbon Emissions Breakdown

Detailed Activities	Ton CO2e	%
Electricity - Grid - Processing Activities	92.16	7.25
Electricity - Grid - Cooling	23.38	1.84
Electricity - Grid - Bottling Activities	22.01	1.73
Electricity - PV - Processing Activities	3.73	0.29
Electricity - PV - Cooling	0.95	0.07
Electricity - PV - Bottling Activities	0.89	0.07
Direct Fuel - Diesel - Processing Activities	70.62	5.56
Direct Fuel - Diesel - Bottling Activities	25.22	1.99
Direct Fuel - Natural Gas - Processing Activities	0.90	0.07
Processing Inputs - CO2 -	0.47	0.04
Processing Inputs - Barrels - Number of 225 litre wooden wine barrels used.	0.34	0.03
Processing Inputs - Barrels - Number of 300 litre wooden wine barrels used.	0.08	0.01
Processing Inputs - Barrels - Number of 500 litre wooden wine barrels used.	0.16	0.01
Processing Inputs - Wooded products - Wooded products for wine fermentation	0.28	0.02
Waste - Organic Waste - Compost	2.69	0.21
Waste - Non-Organic Waste - Recycled	1.10	0.09
Waste - Non-Organic Waste - Landfill	3.28	0.26
Waste Water - -	31.98	2.52
Packaging & Bins - Glass (South Africa) - Glass (South Africa)	822.12	64.70
Packaging & Bins - Glass (Other) - Glass (Other)	52.71	4.15
Packaging & Bins - Corrugated Cardboard (Cartons) - Corrugated Cardboard (Cartons)	50.95	4.01
Packaging & Bins - Paper (Labels) - Paper (Labels)	8.48	0.67
Packaging & Bins - PS (Polystyrene) - PS (Polystyrene)	6.43	0.51
Packaging & Bins - Bulk Wooden Bins - Bulk Wooden Bins	1.43	0.11
Packaging & Bins - Reusable Wooden Pallets - Reusable Wooden Pallets	3.09	0.24
Packaging & Bins - CHEP Pallets - CHEP Pallets	0.29	0.02
Packaging & Bins - Aluminium Cans and Foil - Aluminium Cans and Foil	44.91	3.53
Total	**1,270.64**	**100.00**

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Winery Consumption Benchmarks

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (red)	Litres Water per Ton Grapes Processed	1,968.72	The CCC regional average is 5416.51 Litres Water per Ton Grapes Processed and consist of 65 data points.
Grapes / Wine (red)	Litres Waste Water per Ton Grapes Processed	2,228.49	The CCC regional average is 3787.40 Litres Waste Water per Ton Grapes Processed and consist of 65 data points.
Grapes / Wine (red)	Processing kWh per Ton Grapes Processed	102.68	The CCC regional average is 235.56 Processing kWh per Ton Grapes Processed and consist of 65 data points.
Grapes / Wine (red)	Cooling kWh per Ton Grapes Processed	26.05	The CCC regional average is 257.18 Cooling kWh per Ton Grapes Processed and consist of 65 data points.
Grapes / Wine (red)	Kg Glass per Liter Wine	0.46	The CCC regional average is 1.03 Kg Glass per Liter Wine and consist of 58 data points.

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (white)	Litres Water per Ton Grapes Processed	2,076.72	The CCC regional average is 5763.58 Litres Water per Ton Grapes Processed and consist of 62 data points.
Grapes / Wine (white)	Litres Waste Water per Ton Grapes Processed	2,228.49	The CCC regional average is 3754.98 Litres Waste Water per Ton Grapes Processed and consist of 62 data points.
Grapes / Wine (white)	Processing kWh per Ton Grapes Processed	117.30	The CCC regional average is 226.17 Processing kWh per Ton Grapes Processed and consist of 62 data points.
Grapes / Wine (white)	Cooling kWh per Ton Grapes Processed	29.76	The CCC regional average is 335.09 Cooling kWh per Ton Grapes Processed and consist of 62 data points.
Grapes / Wine (white)	Kg Glass per Liter Wine	0.44	The CCC regional average is 0.79 Kg Glass per Liter Wine and consist of 55 data points.