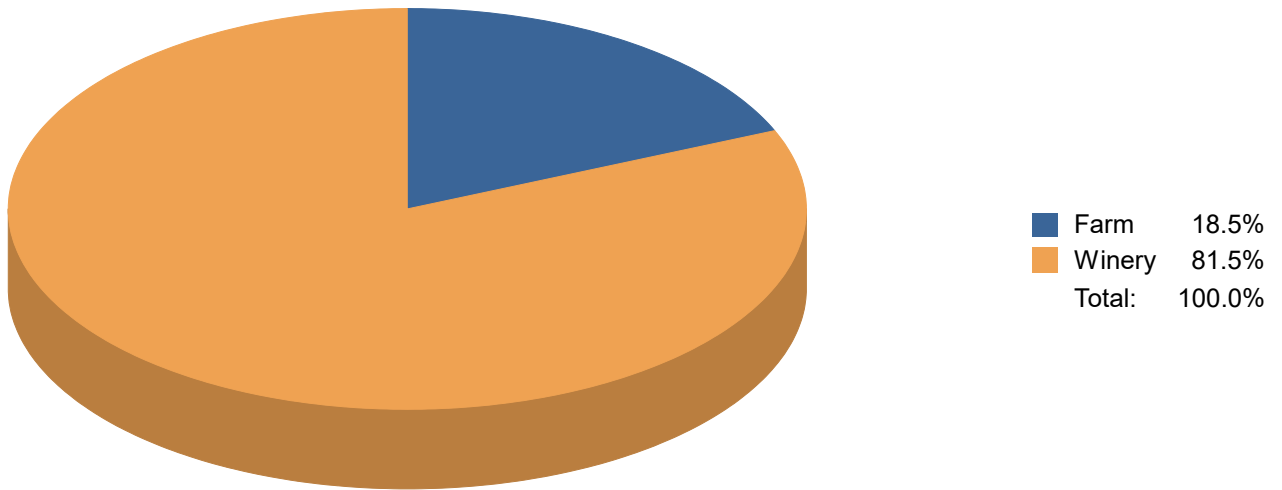




## Carbon Calculator Results

**Business Name:** Klein Constantia Winery (Pty) Ltd  
**Creation Date:** 2022/05/20 10:06:38  
**Data Collection Period:** May 2021 to Apr 2022  
**Report Grade:** B1 - This dataset has been checked by CCC and is part of the benchmark.

## Business Unit - Boundary View



Boundary	Ton CO2e	%
Farm	132.12	18.51
Winery	581.79	81.49
<b>Total</b>	<b>713.91</b>	<b>100.00</b>

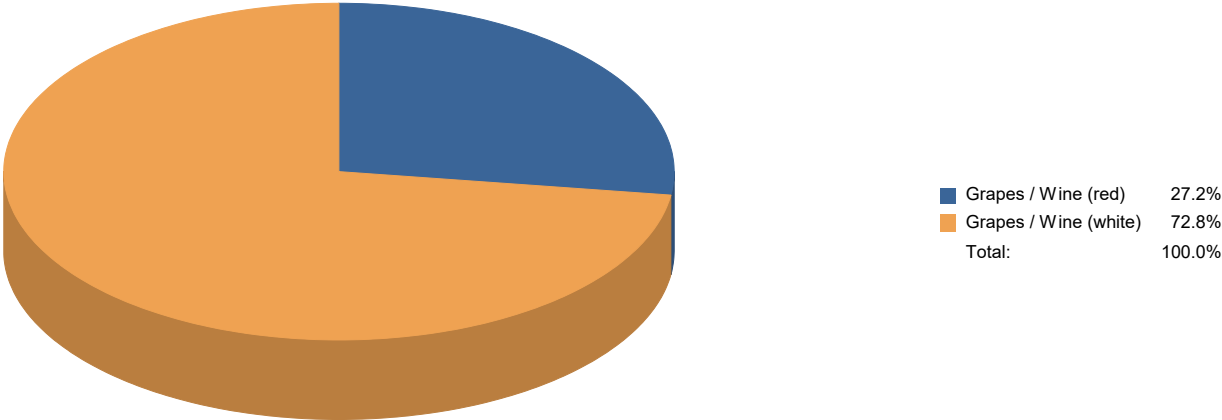
The Carbon Calculator must be completed on an annual basis. This allows users to monitor their carbon footprint trend and analyse improvements.

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

# Business Unit - Commodity View



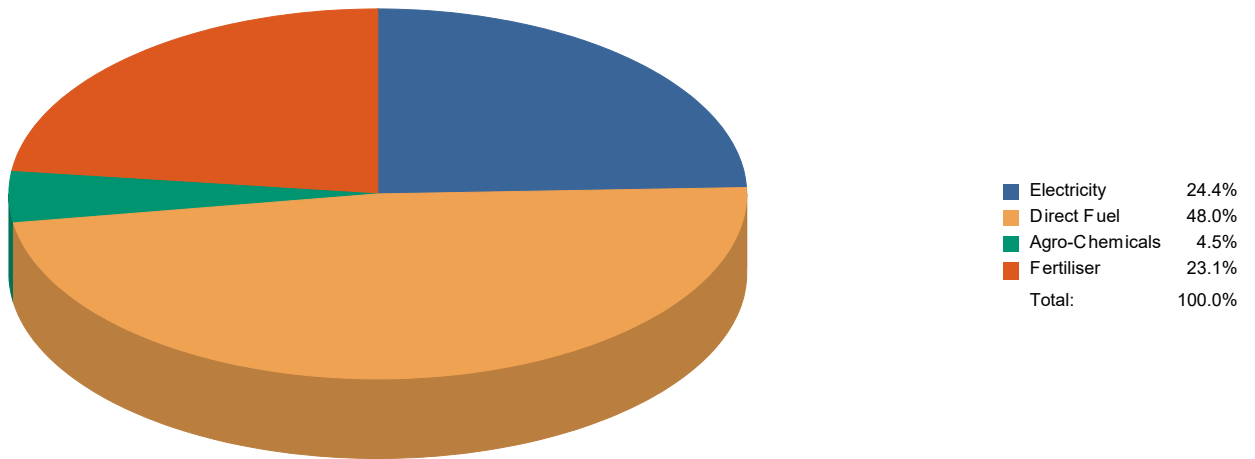
Commodity	Ton CO2e	%
Grapes / Wine (red)	193.91	27.16
Grapes / Wine (white)	519.99	72.84
<b>Total</b>	<b>713.91</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Farm - Emission Source View



Emission Source	Ton CO2e	%
Electricity	32.29	24.44
Direct Fuel	63.43	48.01
Agro-Chemicals	5.92	4.48
Fertiliser	30.48	23.07
<b>Total</b>	<b>132.12</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Farm Commodity Benchmark

Commodity	Kg CO2e per Kg Fruit	Benchmark
Grapes / Wine (red)	0.30	The CCC regional average is 0.41 Kg CO2e per Kg Fruit and consist of 5 data points.
Grapes / Wine (white)	0.38	The CCC regional average is 0.48 Kg CO2e per Kg Fruit and consist of 5 data points.

## Farm Hectare Breakdown

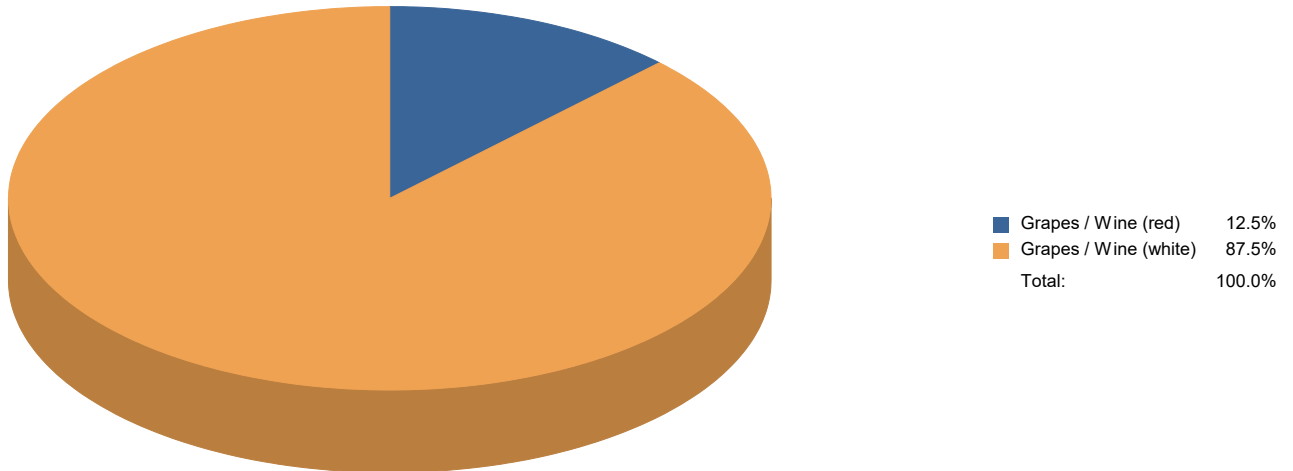
Commodity	Ton CO2e per Bearing Ha
Grapes / Wine (red)	1.92
Grapes / Wine (white)	1.90

## Farm Scope Breakdown

	Ton CO2e	%
Scope 1	63.73	48.23
Scope 2	31.99	24.21
Scope 3	36.40	27.55
<b>Total</b>	<b>132.12</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd  
**Dataset:** 2022/05/20 10:06:38  
**Data Collection Period:** May 2021 to Apr 2022

## Farm - Commodity View



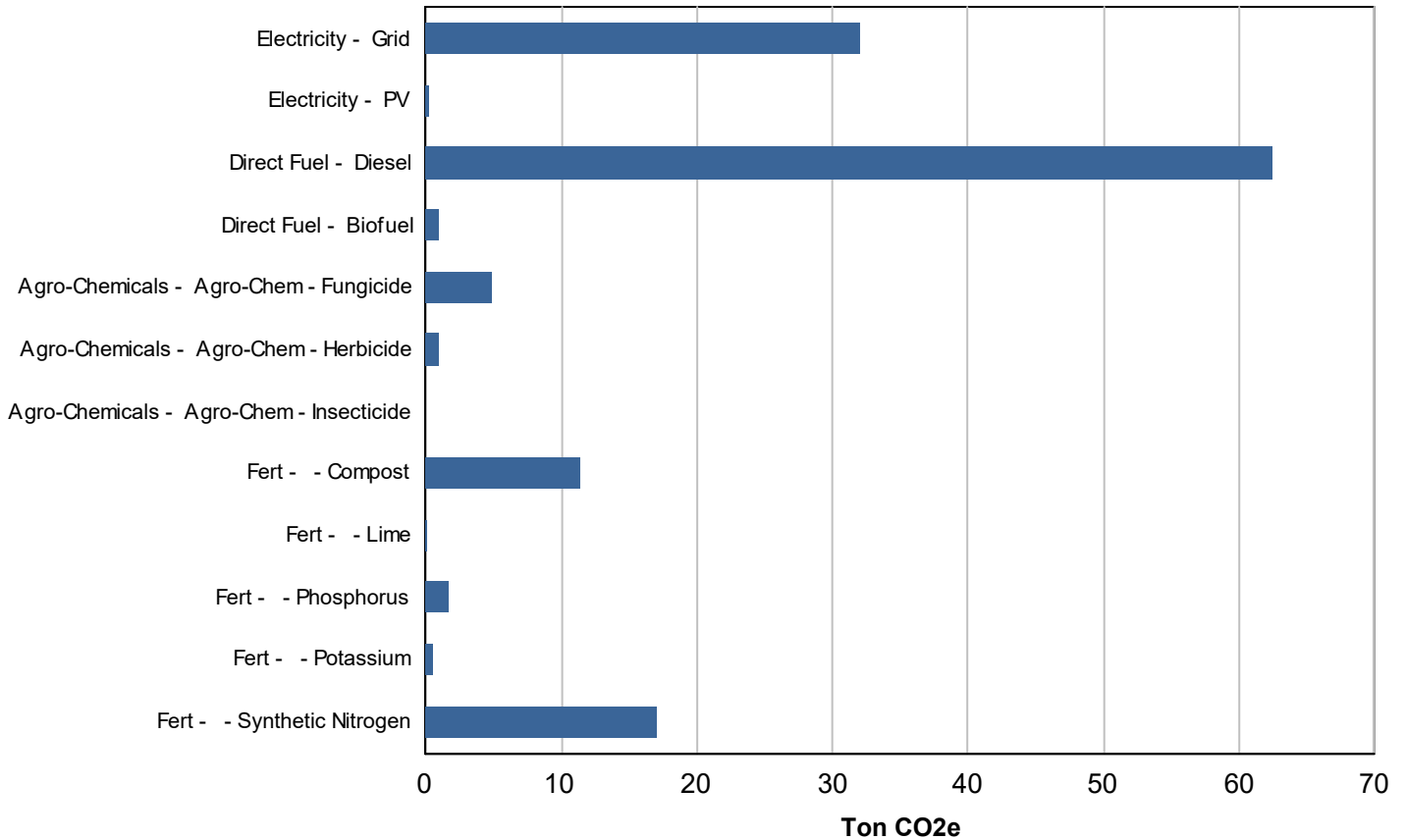
Commodity	Ton CO2e	%
Grapes / Wine (red)	16.47	12.46
Grapes / Wine (white)	115.65	87.54
<b>Total</b>	<b>132.12</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Farm - Emission Source Breakdown



Emission Source	Ton CO2e	%
Electricity - Grid	31.99	24.21
Electricity - PV	0.30	0.23
Direct Fuel - Diesel	62.46	47.28
Direct Fuel - Biofuel	0.96	0.73
Agro-Chemicals - Agro-Chem - Fungicide	4.90	3.71
Agro-Chemicals - Agro-Chem - Herbicide	1.01	0.77
Agro-Chemicals - Agro-Chem - Insecticide	0.01	0.01
Fert - - Compost	11.33	8.58
Fert - - Lime	0.04	0.03
Fert - - Phosphorus	1.65	1.25
Fert - - Potassium	0.54	0.41
Fert - - Synthetic Nitrogen	16.92	12.81

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

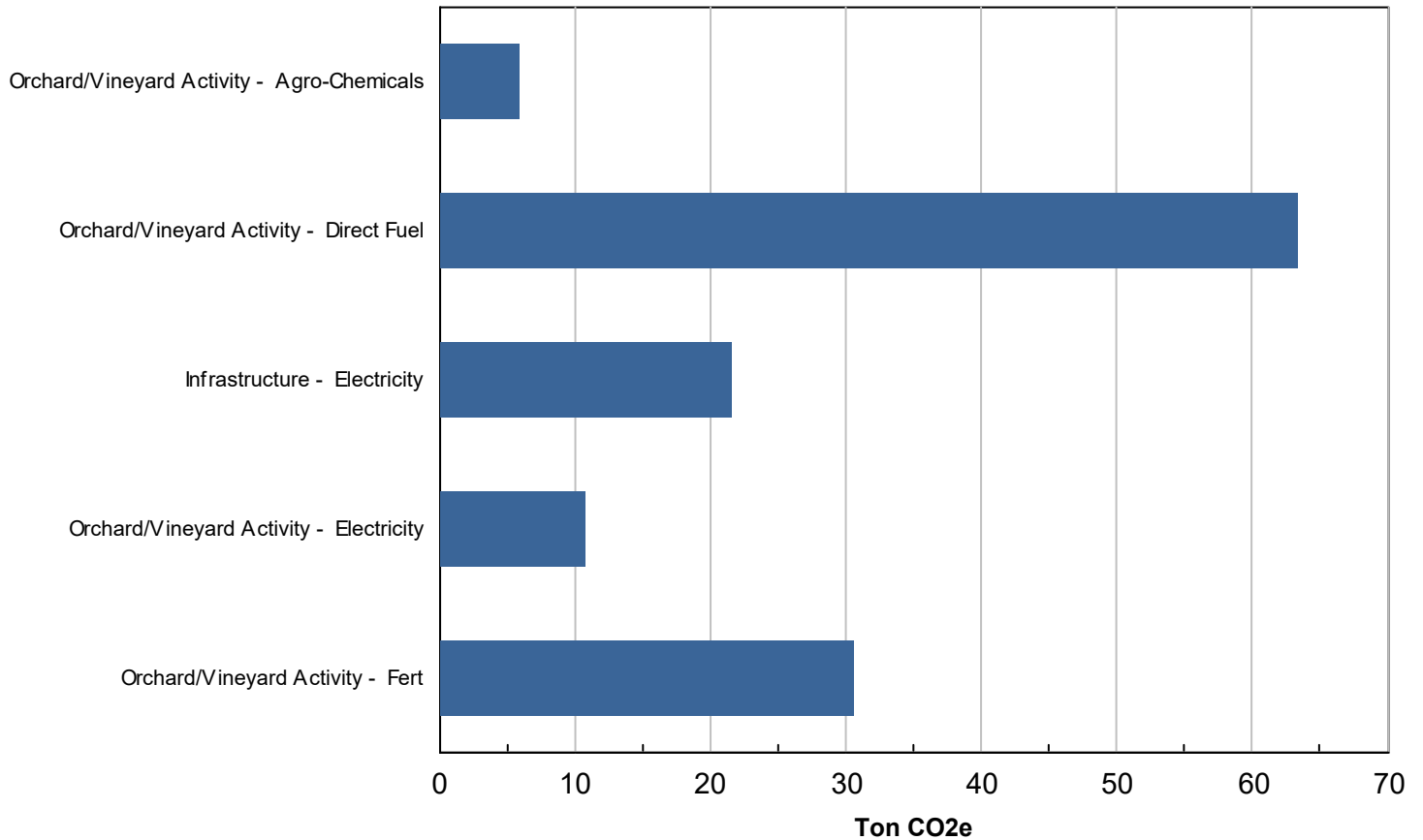
<b>Total</b>	<b>132.12</b>	<b>100.00</b>
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**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Farm - Activity Breakdown



Activity Breakdown	Ton CO2e	%
Orchard/Vineyard Activity - Agro-Chemicals	5.92	4.48
Orchard/Vineyard Activity - Direct Fuel	63.43	48.01
Infrastructure - Electricity	21.63	16.37
Orchard/Vineyard Activity - Electricity	10.66	8.07
Orchard/Vineyard Activity - Fert	30.48	23.07
<b>Total</b>	<b>132.12</b>	<b>100.00</b>



**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Detailed Carbon Emissions Breakdown

Detailed Activities	Ton CO2e	%
Electricity - Grid - Orchard/Vineyard Activity - BO	9.84	7.45
Electricity - Grid - Orchard/Vineyard Activity - NBO	0.83	0.63
Electricity - Grid - Infrastructure	21.33	16.14
Electricity - PV - Infrastructure	0.30	0.23
Direct Fuel - Diesel - Orchard/Vineyard Activity - BO	57.62	43.61
Direct Fuel - Diesel - Orchard/Vineyard Activity - NBO	4.84	3.67
Direct Fuel - Biofuel - Orchard/Vineyard Activity	0.96	0.73
Fert - - Synthetic Nitrogen - Orchard/Vineyard Activity - BO	15.61	11.81
Fert - - Synthetic Nitrogen - Orchard/Vineyard Activity - NBO	1.31	0.99
Fert - - Phosphorus - Orchard/Vineyard Activity - BO	1.52	1.15
Fert - - Phosphorus - Orchard/Vineyard Activity - NBO	0.13	0.10
Fert - - Potassium - Orchard/Vineyard Activity - BO	0.50	0.37
Fert - - Potassium - Orchard/Vineyard Activity - NBO	0.04	0.03
Fert - - Compost - Orchard/Vineyard Activity - BO	10.45	7.91
Fert - - Compost - Orchard/Vineyard Activity - NBO	0.88	0.66
Fert - - Lime - Orchard/Vineyard Activity - BO	0.03	0.03
Fert - - Lime - Orchard/Vineyard Activity - NBO	0.00	0.00
Agro-Chemicals - Agro-Chem - Fungicide - Orchard/Vineyard Activity - BO	4.52	3.42
Agro-Chemicals - Agro-Chem - Fungicide - Orchard/Vineyard Activity - NBO	0.38	0.29
Agro-Chemicals - Agro-Chem - Insecticide - Orchard/Vineyard Activity - BO	0.01	0.01
Agro-Chemicals - Agro-Chem - Insecticide - Orchard/Vineyard Activity - NBO	0.00	0.00
Agro-Chemicals - Agro-Chem - Herbicide - Orchard/Vineyard Activity - BO	0.93	0.71
Agro-Chemicals - Agro-Chem - Herbicide - Orchard/Vineyard Activity - NBO	0.08	0.06
<b>Total</b>	<b>132.12</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd  
**Dataset:** 2022/05/20 10:06:38  
**Data Collection Period:** May 2021 to Apr 2022

## Farm Consumption Benchmarks

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (red)	kL Water per Ton Fruit	615.16	The CCC regional average is 19.38 kL Water per Ton Fruit and consist of 4 data points.
Grapes / Wine (red)	kL Water per Bearing Ha	4,045.85	N/A
Grapes / Wine (red)	kL Water per Non-Bearing Ha	4,045.85	N/A
Grapes / Wine (red)	kWh Orchard / Vineyard Electricity per Ton Fruit	23.51	The CCC regional average is 98.54 kWh Orchard / Vineyard Electricity per Ton Fruit and consist of 4 data points.
Grapes / Wine (red)	kWh Orchard / Vineyard Electricity per Bearing Ha	154.63	The CCC regional average is 892.81 kWh Orchard / Vineyard Electricity per Bearing Ha and consist of 4 data points.
Grapes / Wine (red)	Liters Orchard / Vineyard Diesel per Ton Fruit	38.65	The CCC regional average is 29.24 Liters Orchard / Vineyard Diesel per Ton Fruit and consist of 4 data points.
Grapes / Wine (red)	Liters Orchard / Vineyard Diesel per Bearing Ha	254.18	The CCC regional average is 257.60 Liters Orchard / Vineyard Diesel per Bearing Ha and consist of 4 data points.
Grapes / Wine (red)	Kg Pure N per Ton Fruit	2.88	The CCC regional average is 3.24 Kg Pure N per Ton Fruit and consist of 4 data points.
Grapes / Wine (red)	Kg Pure N per Bearing Ha	18.95	The CCC regional average is 30.20 Kg Pure N per Bearing Ha and consist of 4 data points.

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (white)	kL Water per Ton Fruit	783.76	The CCC regional average is 7.61 kL Water per Ton Fruit and consist of 4 data points.
Grapes / Wine (white)	kL Water per Bearing Ha	4,045.85	N/A
Grapes / Wine (white)	kL Water per Non-Bearing Ha	4,045.85	N/A
Grapes / Wine (white)	kWh Orchard / Vineyard Electricity per Ton Fruit	31.70	The CCC regional average is 94.31 kWh Orchard / Vineyard Electricity per Ton Fruit and consist of 4 data points.
Grapes / Wine (white)	kWh Orchard / Vineyard Electricity per Bearing Ha	163.65	The CCC regional average is 597.57 kWh Orchard / Vineyard Electricity per Bearing Ha and consist of 4 data points.
Grapes / Wine (white)	Liters Orchard / Vineyard Diesel per Ton Fruit	52.11	The CCC regional average is 33.69 Liters Orchard / Vineyard Diesel per Ton Fruit and consist of 4 data points.
Grapes / Wine (white)	Liters Orchard / Vineyard Diesel per Bearing Ha	269.00	The CCC regional average is 194.58 Liters Orchard / Vineyard Diesel per Bearing Ha and consist of 4 data points.
Grapes / Wine (white)	Kg Pure N per Ton Fruit	3.88	The CCC regional average is 4.50 Kg Pure N per Ton Fruit and consist of 4 data points.
Grapes / Wine (white)	Kg Pure N per Bearing Ha	20.05	The CCC regional average is 31.50 Kg Pure N per Bearing Ha and consist of 4 data points.

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

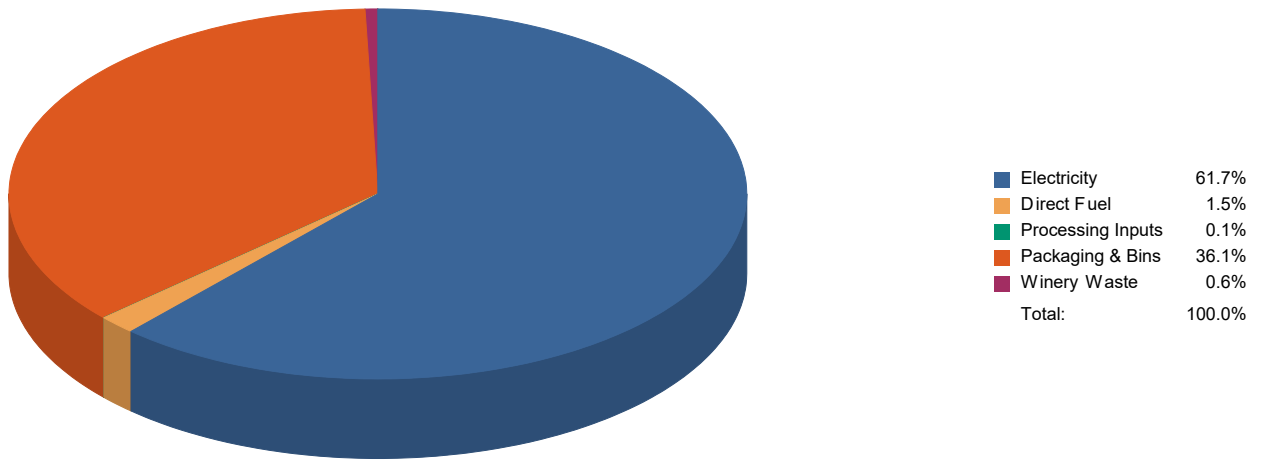
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**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Winery - Emission Source View



Emission Source	Ton CO2e	%
Electricity	359.24	61.75
Direct Fuel	8.74	1.50
Processing Inputs	0.86	0.15
Packaging & Bins	209.74	36.05
Winery Waste	3.21	0.55
<b>Total</b>	<b>581.79</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Winery Commodity Benchmark

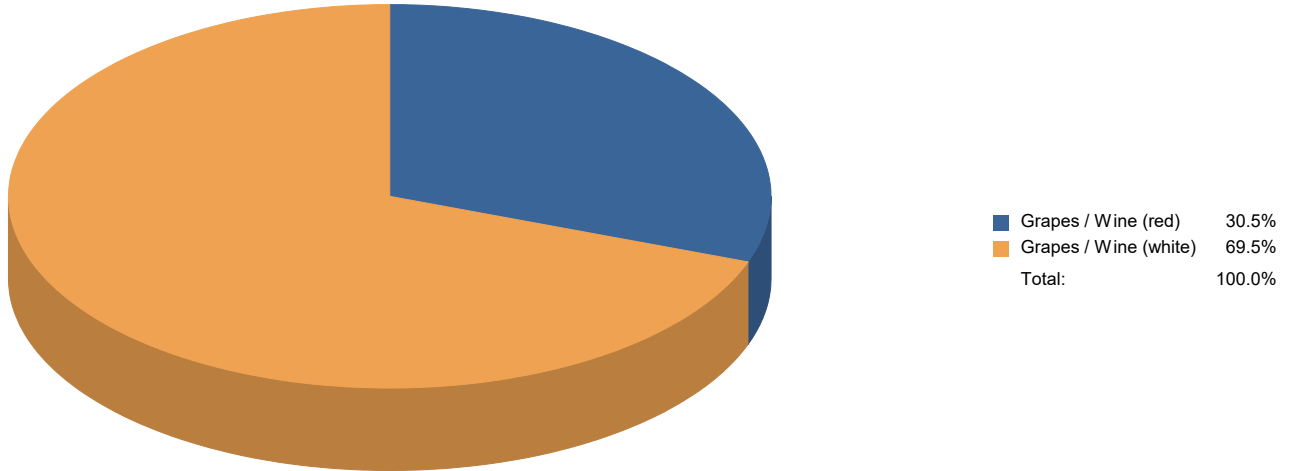
Commodity	Kg CO2e per L Wine	Benchmark
Grapes / Wine (red) - Bottling	1.00	The CCC regional average is 0.72 Kg CO2e per L Wine and consist of 6 data points.
Grapes / Wine (red) - Processing	1.38	The CCC regional average is 0.58 Kg CO2e per L Wine and consist of 6 data points.
Grapes / Wine (white) - Bottling	0.49	The CCC regional average is 0.89 Kg CO2e per L Wine and consist of 5 data points.
Grapes / Wine (white) - Processing	1.00	The CCC regional average is 0.70 Kg CO2e per L Wine and consist of 5 data points.

## Winery Scope Breakdown

	Ton CO2e	%
Scope 1	13.25	2.28
Scope 2	356.65	61.30
Scope 3	211.89	36.42
<b>Total</b>	<b>581.79</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd  
**Dataset:** 2022/05/20 10:06:38  
**Data Collection Period:** May 2021 to Apr 2022

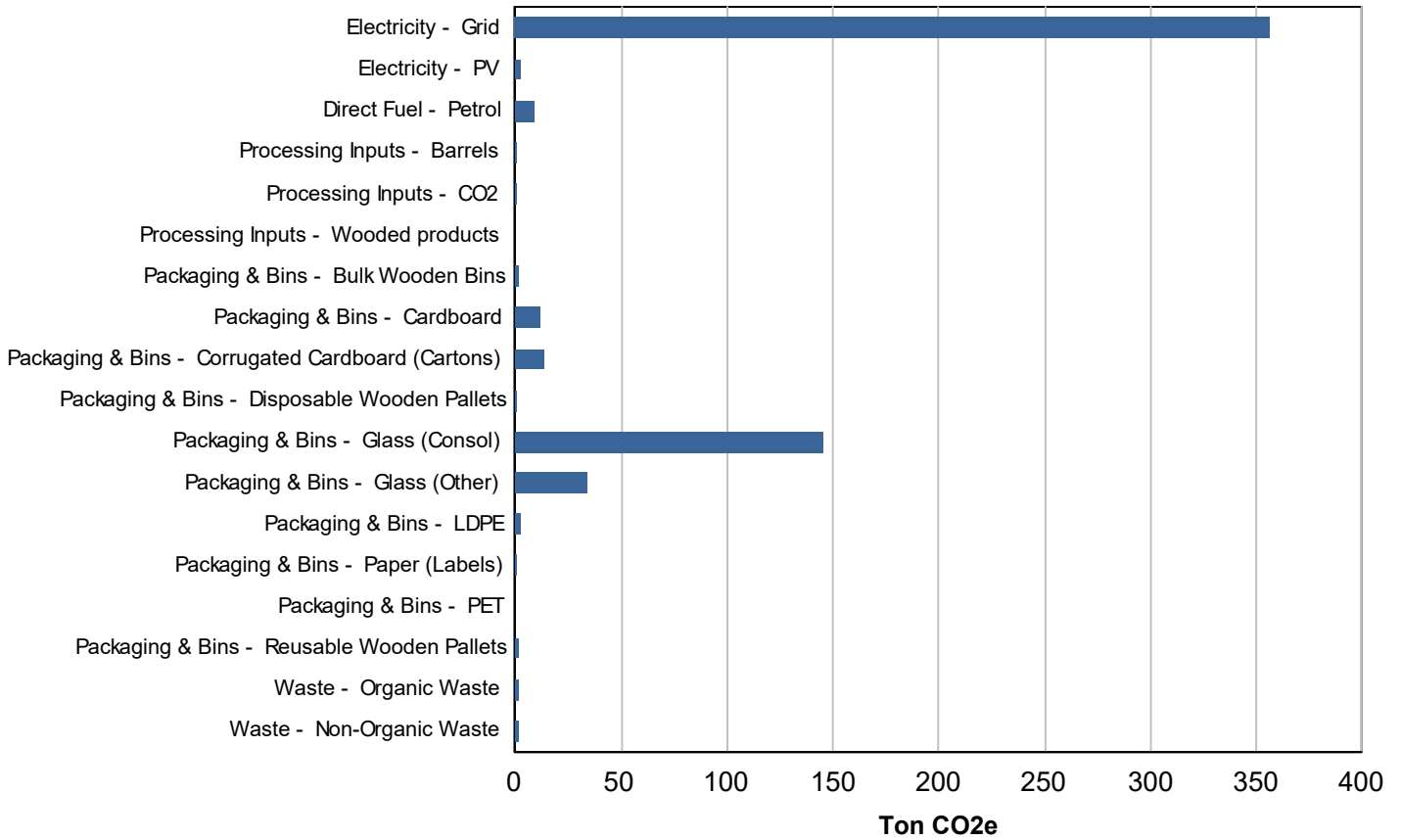
## Winery - Commodity View



Commodity	Ton CO2e	%
Grapes / Wine (red)	177.45	30.50
Grapes / Wine (white)	404.34	69.50
<b>Total</b>	<b>581.79</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd  
**Dataset:** 2022/05/20 10:06:38  
**Data Collection Period:** May 2021 to Apr 2022

# Winery - Emission Source Breakdown



Emission Source	Ton CO2e	%
Electricity - Grid	356.65	61.30
Electricity - PV	2.59	0.45
Direct Fuel - Petrol	8.74	1.50
Processing Inputs - Barrels	0.27	0.05
Processing Inputs - CO2	0.45	0.08
Processing Inputs - Wooded products	0.14	0.02
Packaging & Bins - Bulk Wooden Bins	1.43	0.25
Packaging & Bins - Cardboard	11.53	1.98
Packaging & Bins - Corrugated Cardboard (Cartons)	13.18	2.26
Packaging & Bins - Disposable Wooden Pallets	0.52	0.09
Packaging & Bins - Glass (Consol)	145.31	24.98
Packaging & Bins - Glass (Other)	33.59	5.77

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

Packaging & Bins - LDPE	2.40	0.41
Packaging & Bins - Paper (Labels)	0.29	0.05
Packaging & Bins - PET	0.08	0.01
Packaging & Bins - Reusable Wooden Pallets	1.41	0.24
Waste - Organic Waste	1.47	0.25
Waste - Non-Organic Waste	1.74	0.30
<b>Total</b>	<b>581.79</b>	<b>100.00</b>

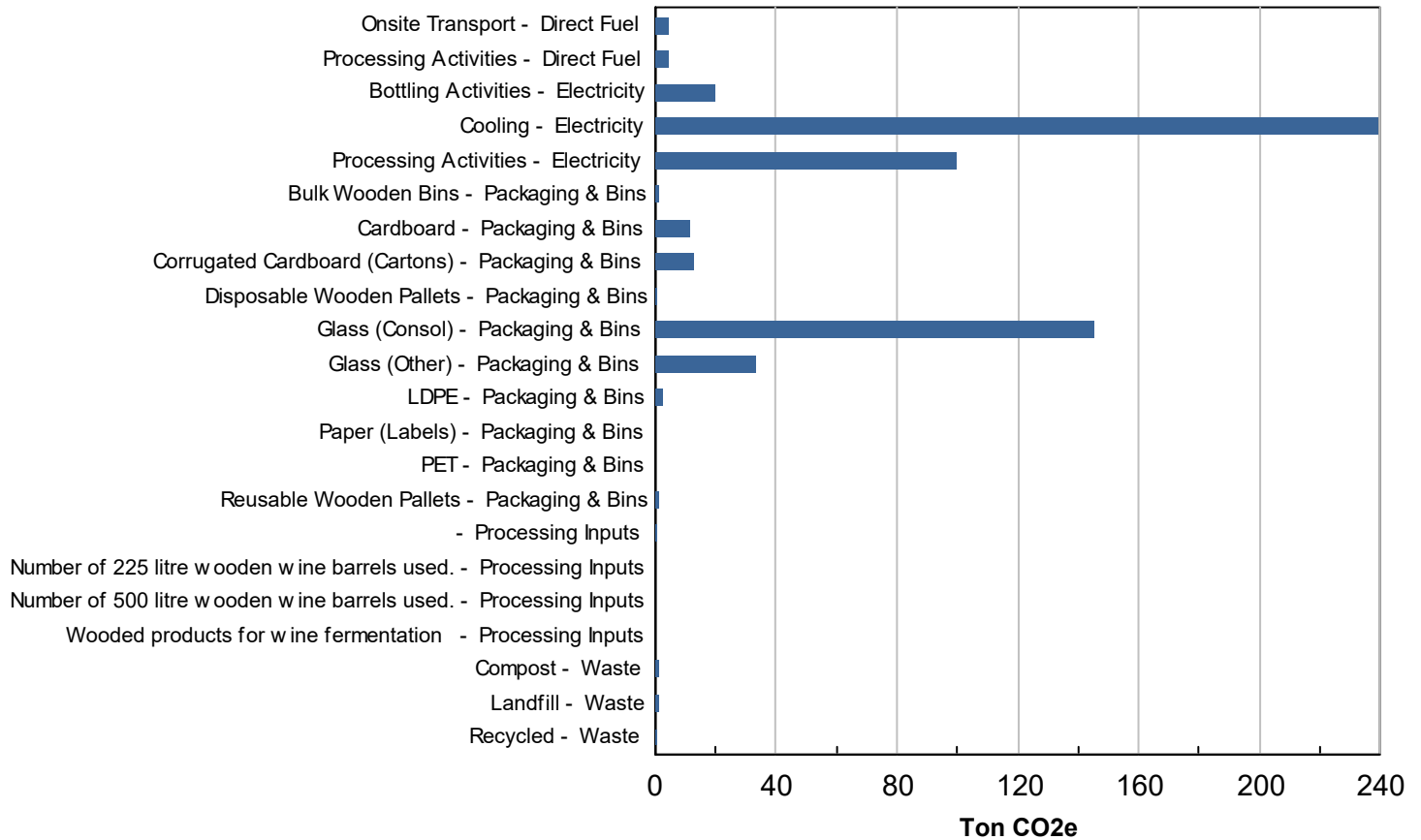


**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

# Winery - Activity Breakdown



Activity Breakdown	Ton CO2e	%
Onsite Transport - Direct Fuel	4.43	0.76
Processing Activities - Direct Fuel	4.31	0.74
Bottling Activities - Electricity	20.13	3.46
Cooling - Electricity	239.37	41.14
Processing Activities - Electricity	99.74	17.14
Bulk Wooden Bins - Packaging & Bins	1.43	0.25
Cardboard - Packaging & Bins	11.53	1.98
Corrugated Cardboard (Cartons) - Packaging & Bins	13.18	2.26
Disposable Wooden Pallets - Packaging & Bins	0.52	0.09
Glass (Consol) - Packaging & Bins	145.31	24.98
Glass (Other) - Packaging & Bins	33.59	5.77
LDPE - Packaging & Bins	2.40	0.41
Paper (Labels) - Packaging & Bins	0.29	0.05
PET - Packaging & Bins	0.08	0.01

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

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Reusable Wooden Pallets - Packaging & Bins	1.41	0.24
- Processing Inputs	0.45	0.08
Number of 225 litre wooden wine barrels used. - Processing Inputs	0.05	0.01
Number of 500 litre wooden wine barrels used. - Processing Inputs	0.23	0.04
Wooded products for wine fermentation - Processing Inputs	0.14	0.02
Compost - Waste	1.47	0.25
Landfill - Waste	1.28	0.22
Recycled - Waste	0.46	0.08
<b>Total</b>	<b>581.79</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd  
**Dataset:** 2022/05/20 10:06:38  
**Data Collection Period:** May 2021 to Apr 2022

## Detailed Carbon Emissions Breakdown

Detailed Activities	Ton CO2e	%
Electricity - Grid - Processing Activities	99.02	17.02
Electricity - Grid - Cooling	237.64	40.85
Electricity - Grid - Bottling Activities	19.99	3.44
Electricity - PV - Processing Activities	0.72	0.12
Electricity - PV - Cooling	1.73	0.30
Electricity - PV - Bottling Activities	0.15	0.02
Direct Fuel - Petrol - Processing Activities	4.31	0.74
Direct Fuel - Petrol - Onsite Transport	4.43	0.76
Processing Inputs - CO2 -	0.45	0.08
Processing Inputs - Barrels - Number of 225 litre wooden wine barrels used.	0.05	0.01
Processing Inputs - Barrels - Number of 500 litre wooden wine barrels used.	0.23	0.04
Processing Inputs - Wooded products - Wooded products for wine fermentation	0.14	0.02
Waste - Organic Waste - Compost	1.47	0.25
Waste - Non-Organic Waste - Recycled	0.46	0.08
Waste - Non-Organic Waste - Landfill	1.28	0.22
Packaging & Bins - Glass (Consol) - Glass (Consol)	145.31	24.98
Packaging & Bins - Glass (Other) - Glass (Other)	33.59	5.77
Packaging & Bins - Cardboard - Cardboard	11.53	1.98
Packaging & Bins - Corrugated Cardboard (Cartons) - Corrugated Cardboard (Cartons)	13.18	2.26
Packaging & Bins - Paper (Labels) - Paper (Labels)	0.29	0.05
Packaging & Bins - PET - PET	0.08	0.01
Packaging & Bins - LDPE - LDPE	2.40	0.41
Packaging & Bins - Bulk Wooden Bins - Bulk Wooden Bins	1.43	0.25
Packaging & Bins - Disposable Wooden Pallets - Disposable Wooden Pallets	0.52	0.09
Packaging & Bins - Reusable Wooden Pallets - Reusable Wooden Pallets	1.41	0.24
<b>Total</b>	<b>581.79</b>	<b>100.00</b>

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

**Data Collection Period:** May 2021 to Apr 2022

## Winery Consumption Benchmarks

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (red)	Litres Water per Ton Grapes Processed	3,691.55	The CCC regional average is 13094.42 Litres Water per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (red)	Litres Waste Water per Ton Grapes Processed	2,761.16	The CCC regional average is 6546.08 Litres Waste Water per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (red)	Processing kWh per Ton Grapes Processed	339.54	The CCC regional average is 174.94 Processing kWh per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (red)	Cooling kWh per Ton Grapes Processed	814.90	The CCC regional average is 365.86 Cooling kWh per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (red)	Kg Glass per Liter Wine	1.05	The CCC regional average is 0.48 Kg Glass per Liter Wine and consist of 4 data points.

Commodity	Consumption Measure	Result	Benchmark
Grapes / Wine (white)	Litres Water per Ton Grapes Processed	2,660.86	The CCC regional average is 8937.66 Litres Water per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (white)	Litres Waste Water per Ton Grapes Processed	2,761.16	The CCC regional average is 6546.08 Litres Waste Water per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (white)	Processing kWh per Ton Grapes Processed	244.90	The CCC regional average is 253.84 Processing kWh per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (white)	Cooling kWh per Ton Grapes Processed	587.77	The CCC regional average is 377.64 Cooling kWh per Ton Grapes Processed and consist of 4 data points.
Grapes / Wine (white)	Kg Glass per Liter Wine	0.34	The CCC regional average is 0.48 Kg Glass per Liter Wine and consist of 4 data points.

**Business Name:** Klein Constantia Winery (Pty) Ltd

**Dataset:** 2022/05/20 10:06:38

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