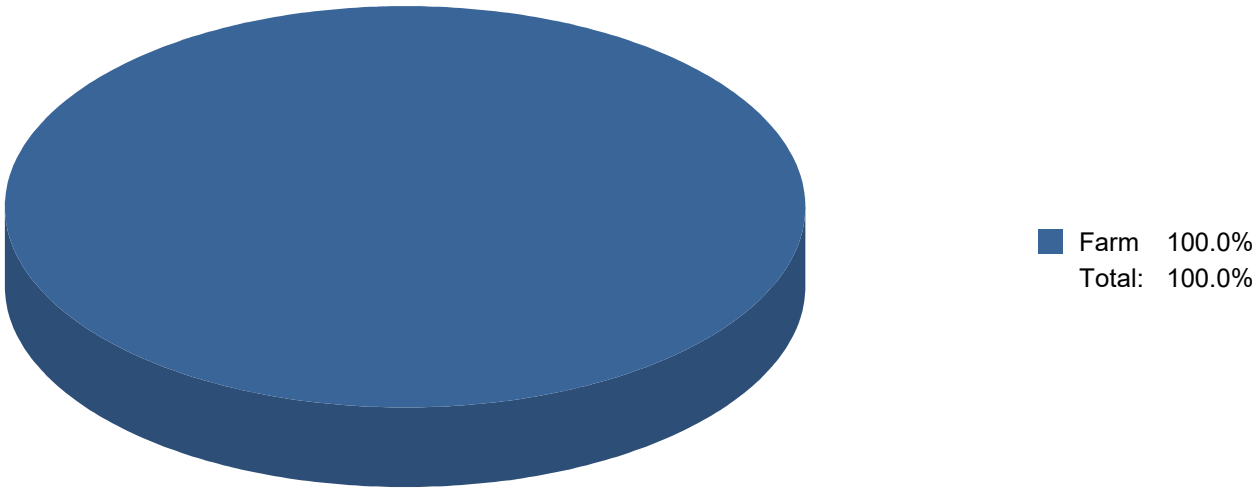
CONFRONTING CLIMATE CHANGE
A SOUTH AFRICAN FRUIT & WINE INITIATIVE

Carbon Calculator Results

Business Name: Thandi Estate
Country Name: South Africa
Creation Date: 8/6/2025 6:10:46AM
Data Collection Period: Jan 2024 to Dec 2024
Report Grade: B1 - This dataset has been checked by CCC and is part of the benchmark.

Business Unit - Boundary View



Boundary	Tonne CO_2e	%
Farm	298.72	100.00
Total	**298.72**	**100.00**

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

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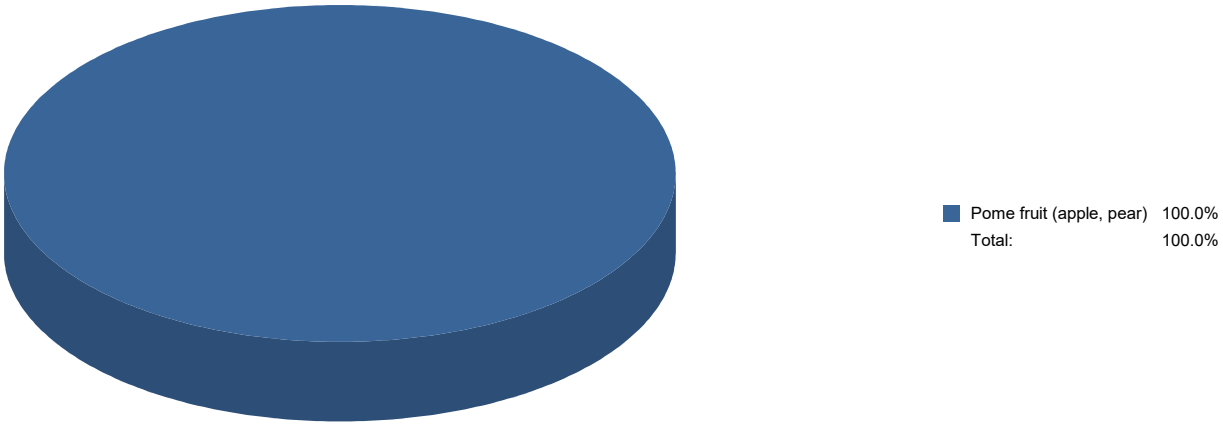
Business Unit - Commodity View



Commodity	Tonne CO_2e	%
Pome fruit (apple, pear)	298.72	100.00
Total	**298.72**	**100.00**

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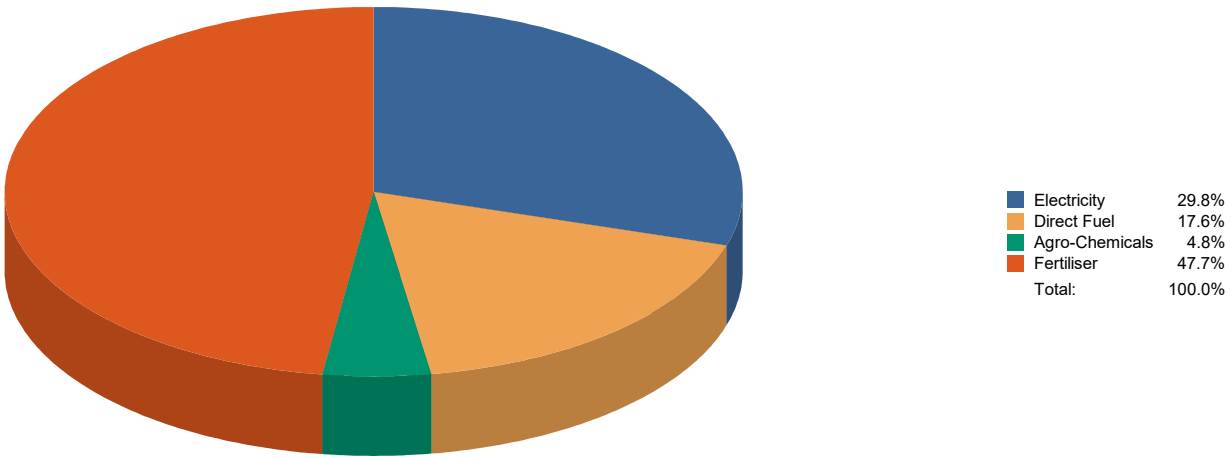
Farm - Emission Source View



Emission Source	Tonne CO_2e	%
Electricity	89.09	29.82
Direct Fuel	52.57	17.60
Agro-Chemicals	14.46	4.84
Fertiliser	142.60	47.74
Total	**298.72**	**100.00**

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Farm Commodity Benchmark

Commodity	Kg CO2e per Kg Fruit	Benchmark
Pome fruit (apple, pear)	0.19	The CCC regional average is 0.11 Kg CO2e per Kg Fruit and consist of 109 data points.

Farm Hectare Breakdown

Commodity	Tonne CO_2e per Bearing Ha
Pome fruit (apple, pear)	7.86

Farm Scope Breakdown

	Tonne CO_2e	%
Scope 1	123.90	41.48
Scope 2	89.09	29.82
Scope 3	85.72	28.70
Total	**298.72**	**100.00**

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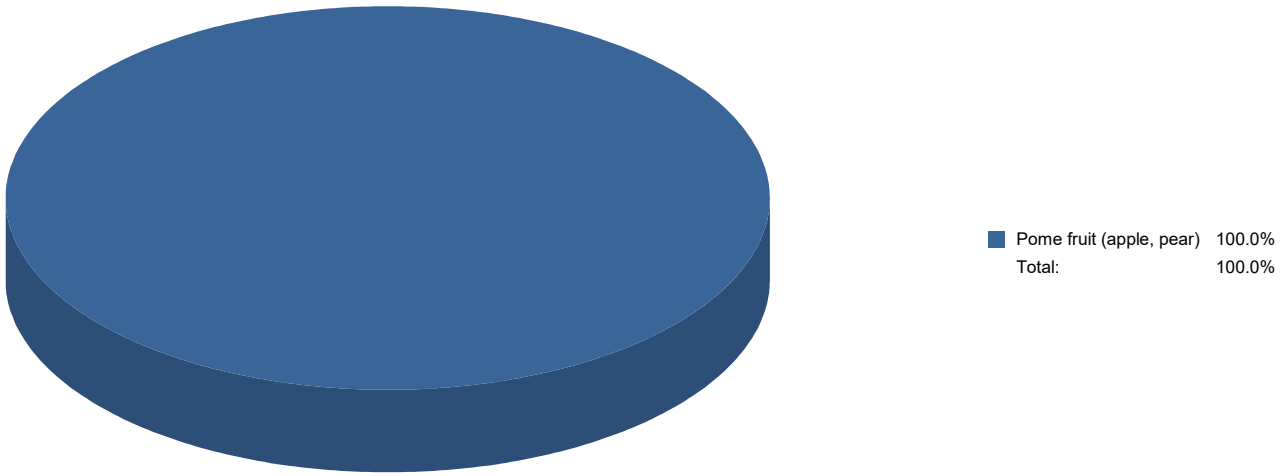

Commodity	Tonne CO_2e	%
Pome fruit (apple, pear)	298.72	100.00
Total	**298.72**	**100.00**

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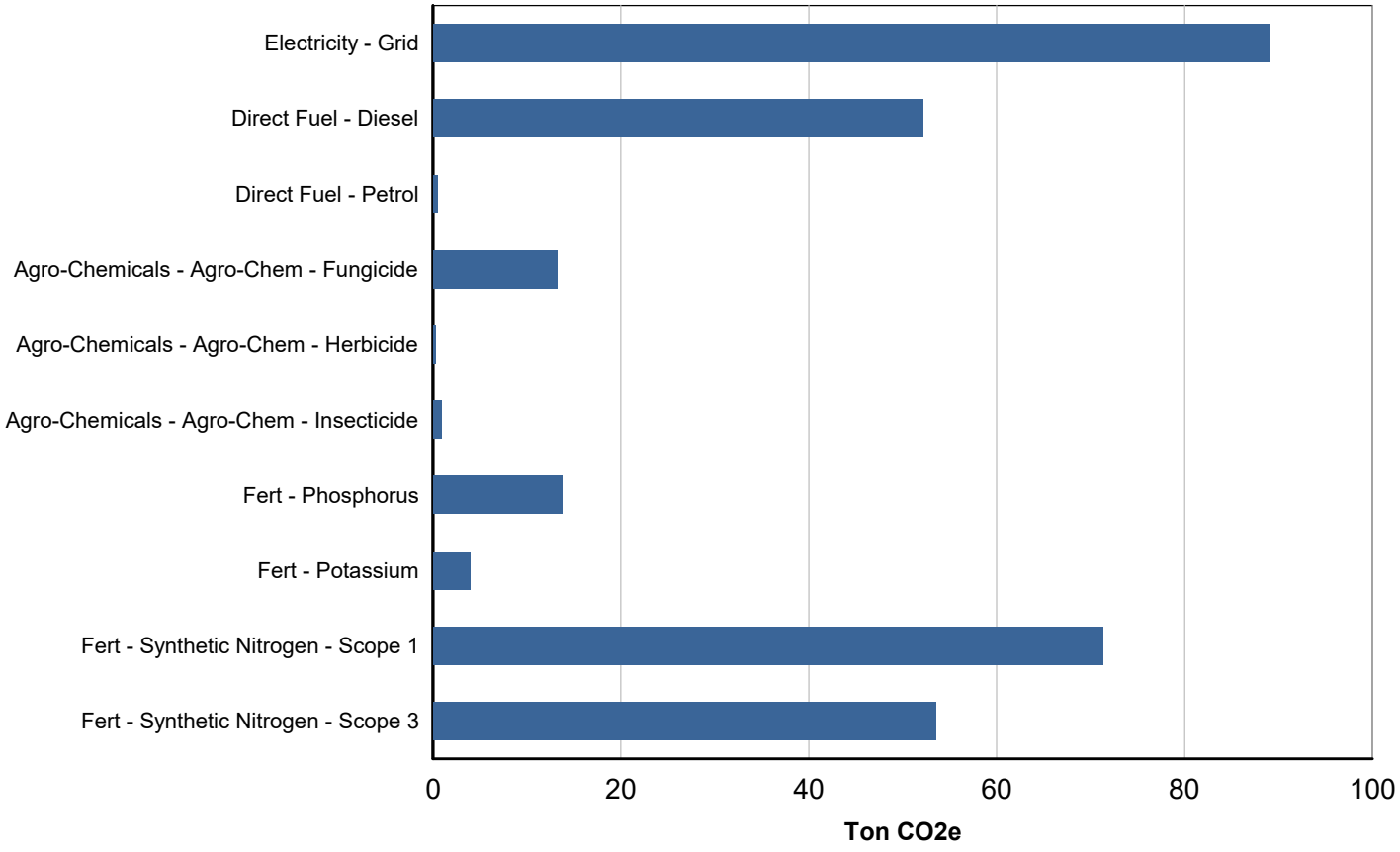
Farm - Emission Source Breakdown



Emission Source	Tonne CO_2e	%
Electricity - Grid	89.09	29.82
Direct Fuel - Diesel	52.11	17.45
Direct Fuel - Petrol	0.46	0.15
Agro-Chemicals - Agro-Chem - Fungicide	13.21	4.42
Agro-Chemicals - Agro-Chem - Herbicide	0.30	0.10
Agro-Chemicals - Agro-Chem - Insecticide	0.94	0.32
Fert - Phosphorus	13.77	4.61
Fert - Potassium	3.99	1.34
Fert - Synthetic Nitrogen - Scope 1	71.33	23.88
Fert - Synthetic Nitrogen - Scope 3	53.50	17.91
Total	**298.72**	**100.00**

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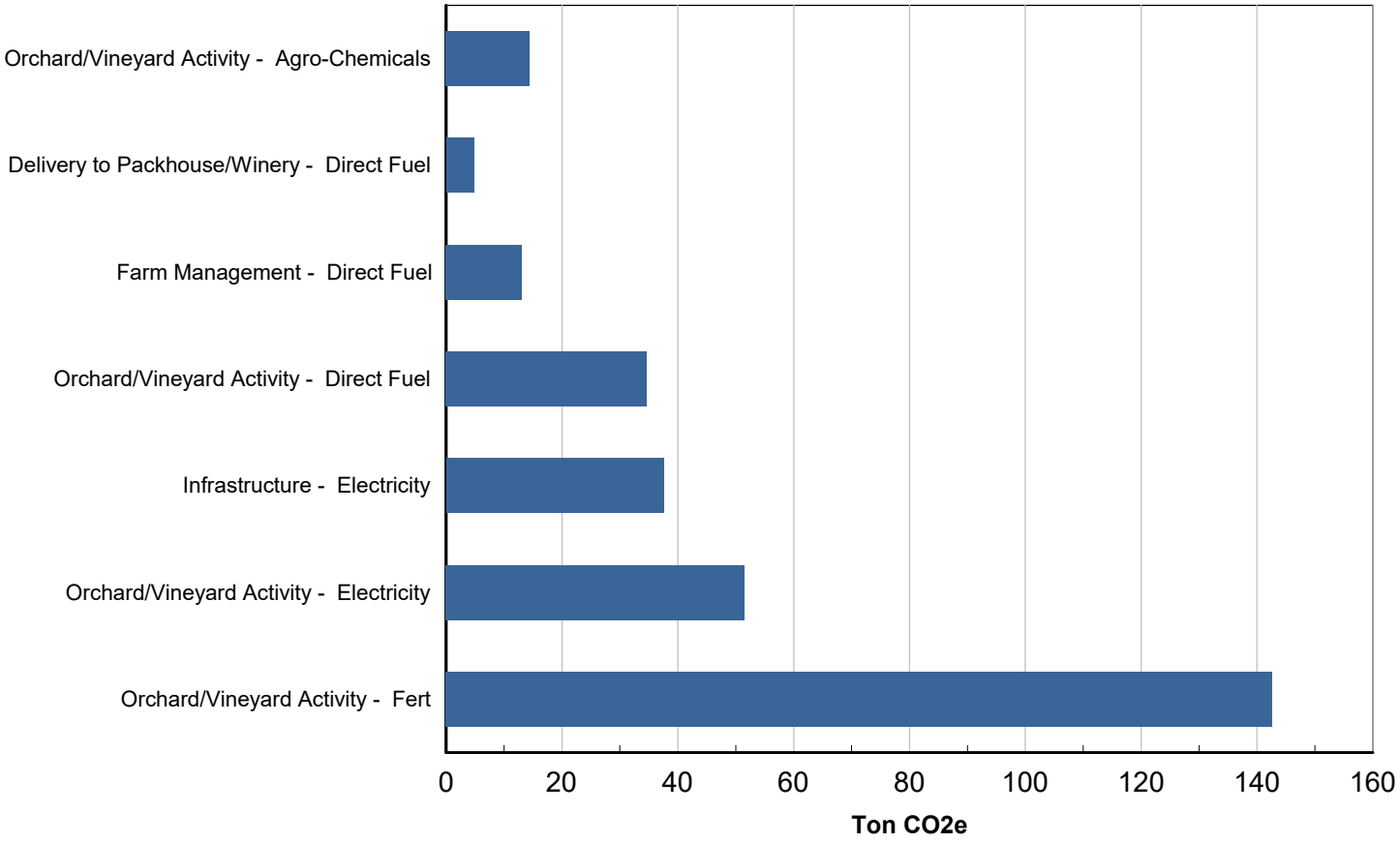
Farm - Activity Breakdown



Activity Breakdown	Tonne CO_2e	%
Orchard/Vineyard Activity - Agro-Chemicals	14.46	4.84
Delivery to Packhouse/Winery - Direct Fuel	4.87	1.63
Farm Management - Direct Fuel	13.09	4.38
Orchard/Vineyard Activity - Direct Fuel	34.60	11.58
Infrastructure - Electricity	37.56	12.57
Orchard/Vineyard Activity - Electricity	51.53	17.25
Orchard/Vineyard Activity - Fert	142.60	47.74
Total	**298.72**	**100.00**

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Detailed Carbon Emissions Breakdown

Detailed Activities	Tonne CO_2e	%
Electricity - Grid - Orchard/Vineyard Activity - BO	51.53	17.25
Electricity - Grid - Infrastructure	37.56	12.57
Direct Fuel - Diesel - Orchard/Vineyard Activity - BO	34.15	11.43
Direct Fuel - Diesel - Delivery to Packhouse/Winery	4.87	1.63
Direct Fuel - Diesel - Farm Management	13.09	4.38
Direct Fuel - Petrol - Orchard/Vineyard Activity	0.46	0.15
Fert - - Synthetic Nitrogen - Orchard/Vineyard Activity - BO	124.83	41.79
Fert - - Phosphorus - Orchard/Vineyard Activity - BO	13.77	4.61
Fert - - Potassium - Orchard/Vineyard Activity - BO	3.99	1.34
Agro-Chemicals - Agro-Chem - Fungicide - Orchard/Vineyard Activity - BO	13.21	4.42
Agro-Chemicals - Agro-Chem - Insecticide - Orchard/Vineyard Activity - BO	0.94	0.32
Agro-Chemicals - Agro-Chem - Herbicide - Orchard/Vineyard Activity - BO	0.30	0.10
Total	**298.72**	**100.00**

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Farm Consumption Benchmarks

Commodity	Consumption Measure	Result	Benchmark
Pome fruit (apple, pear)	kL Water per Ton Fruit	23.88	The CCC regional average is 74.54 kL Water per Ton Fruit and consist of 103 data points.
Pome fruit (apple, pear)	kL Water per Bearing Ha	998.82	The CCC regional average is 4672.67 kL Water per Bearing Ha and consist of 103 data points.
Pome fruit (apple, pear)	kWh Orchard / Vineyard Electricity per Ton Fruit	32.00	The CCC regional average is 47.00 kWh Orchard / Vineyard Electricity per Ton Fruit and consist of 103 data points.
Pome fruit (apple, pear)	kWh Orchard / Vineyard Electricity per Bearing Ha	1,338.74	The CCC regional average is 2637.50 kWh Orchard / Vineyard Electricity per Bearing Ha and consist of 103 data points.
Pome fruit (apple, pear)	Liters Orchard / Vineyard Diesel per Ton Fruit	8.66	The CCC regional average is 7.34 Liters Orchard / Vineyard Diesel per Ton Fruit and consist of 103 data points.
Pome fruit (apple, pear)	Liters Orchard / Vineyard Diesel per Bearing Ha	362.39	The CCC regional average is 432.07 Liters Orchard / Vineyard Diesel per Bearing Ha and consist of 103 data points.
Pome fruit (apple, pear)	Kg Pure N per Ton Fruit	5.34	The CCC regional average is 1.29 Kg Pure N per Ton Fruit and consist of 103 data points.
Pome fruit (apple, pear)	Kg Pure N per Bearing Ha	223.47	The CCC regional average is 77.70 Kg Pure N per Bearing Ha and consist of 103 data points.

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