



TREASURY WINE ESTATES

**TREASURY WINE ESTATES LTD.**

**Qualifying Explanatory Statement for  
Lindeman's European portfolio in support of  
PAS 2060**

First Period: 1<sup>st</sup> January – 31<sup>st</sup> December 2019



## Introduction:

This document forms the Qualifying Explanatory Statement to demonstrate that Treasury Wine Estates has achieved carbon neutrality for its Lindeman's wines marketed in Europe for the period commencing 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2019.

## Section 1: General Information

PAS 2060 Requirement	Client Response
Entity making PAS 2060 declaration:	Treasury Wine Estates Limited
Subject of PAS 2060 declaration:	Lindeman's branded wine range sold within Europe, including production, stores, offices, warehouses and delivery fleets associated with the import and distribution of Lindeman's products within Europe.
Description of Subject:	<ul style="list-style-type: none"> <li>• Cawarra <ul style="list-style-type: none"> <li>○ Cawarra Semillon Chardonnay</li> <li>○ Cawarra Shiraz Cabernet</li> </ul> </li> <li>• Bins Range: 750ml bottles <ul style="list-style-type: none"> <li>○ Bin 25 Sparkling Brut</li> <li>○ Bin 30 Sparkling Rose</li> <li>○ Bin 35 Rose</li> <li>○ Bin 40 Merlot</li> <li>○ Bin 45 Cabernet Sauvignon</li> <li>○ Bin 50 Shiraz</li> <li>○ Bin 55 Shiraz Cabernet</li> <li>○ Bin 65 Chardonnay</li> <li>○ Bin 85 Pinot Grigio</li> <li>○ Bin 90 Moscato</li> <li>○ Bin 95 Sauvignon Blanc</li> <li>○ Bin 99 Pinot Noir</li> <li>○ Bin 64 Crisp Chardonnay</li> </ul> </li> <li>• Bins Range 375ml bottles: <ul style="list-style-type: none"> <li>○ Bin 65 Chardonnay</li> <li>○ Bin 45 Cabernet Sauvignon</li> </ul> </li> <li>• Early Harvest <ul style="list-style-type: none"> <li>○ Early Harvest Rose 5.5%</li> <li>○ Early Harvest Semillon Sauvignon Blanc 5.5%</li> </ul> </li> <li>• The Discoverer <ul style="list-style-type: none"> <li>○ The Discoverer Chardonnay</li> <li>○ The Discoverer Shiraz Cabernet</li> </ul> </li> <li>• Winemaker's Release <ul style="list-style-type: none"> <li>○ Winemaker's Release Australia Chardonnay</li> <li>○ Winemaker's Release Australia Shiraz Cabernet</li> <li>○ Winemaker's Release Spanish White</li> <li>○ Winemaker's Release Spanish Red</li> </ul> </li> <li>• South Africa</li> </ul>

	<ul style="list-style-type: none"> <li>○ South Africa Cabernet Merlot</li> <li>○ South Africa Chardonnay Viognier</li> <li>○ South Africa Chardonnay Sauvignon Blanc</li> <li>○ South Africa Shiraz Cabernet</li> <li>● Alcohol-free <ul style="list-style-type: none"> <li>○ Alcohol Free Cabernet Sauvignon</li> <li>○ Alcohol Free Semillon Chardonnay</li> <li>○ Alcohol Free Sparkling Chardonnay Pinot Noir Muscat</li> </ul> </li> <li>● Varietals <ul style="list-style-type: none"> <li>○ Varietals Chardonnay</li> <li>○ Varietals Shiraz Cabernet</li> </ul> </li> <li>● Bag in Box <ul style="list-style-type: none"> <li>○ 3L Chardonnay BiB</li> <li>○ 3L Rose BiB</li> <li>○ 3L Shiraz Cabernet BiB</li> <li>○ 3L Bin 45 Cabernet Sauvignon BiB</li> <li>○ 3L Bin 65 Chardonnay BiB</li> <li>○ 3L Bin 50 Shiraz BiB</li> </ul> </li> <li>● PET Range <ul style="list-style-type: none"> <li>○ Chardonnay PET</li> <li>○ Riesling PET</li> <li>○ Shiraz Cabernet PET</li> </ul> </li> </ul> <p>The carbon footprint of these products was calculated based on data from calendar year 2019 and covers all aspects of their cradle to grave lifecycle.</p> <p><b>Winemaking:</b> Grapes are grown across Australia, South Africa &amp; Spain</p> <p><b>Wine packaging:</b> Wine is packaged across Australia, South Africa, Spain, The UK and Denmark</p> <p><b>Distribution:</b> Wine is distributed from packaging site to retailers across UK &amp; Ireland, Continental Europe and The Nordics</p> <p><b>Use Phase:</b> Products are used by customers and expected to be stored in a fridge at home (white, rose) or ambient (red). Electricity consumption emissions for refrigeration based on the grid factor for the country of sale of the wine.</p> <p><b>End of Life:</b> primary packaging is expected to either be sent to landfill or recycling.</p>
<p>Rationale for selection of the subject:</p>	<p>Treasury Wine Estates (TWE) is one of the world’s leading wine companies listed on the Australian Securities Exchange (ASX). As the custodian of some</p>

of the world's most trusted premium wines from some of the great wine making regions of the world, TWE recognises the role it plays in shaping a positive future for everyone who touches the business and its products. This means being responsible in how we source and produce wine, prioritising the wellbeing of our people, communities and consumers.

This reflects the commitment to creating long term value by being sustainable in everything TWE does.

Lindeman's is the perfect brand to lead the way in Europe, with its significant profile across the UK, the Nordics and The Netherlands. All life-cycle stages in association with Lindeman's wine portfolio was chosen as this represents all wines sold under the Lindeman's brand in Europe.

The scope of this PAS 2060 includes all emissions based on the operational control principle defined in the 2014 WRI GHG Protocol – Corporate Accounting Standard and the National Greenhouse & Energy Reporting Scheme (NGERS) Act 2008 (Australia).

The footprint was calculated in accordance to:

- PAS 2050: 2011 – Specification for the assessment of the life cycle greenhouse gas emissions of goods and services
- Product Carbon Footprint Protocol (parts 1 & 2)
- Product Environmental Footprint Category Rules (PEFCR) for still and sparkling wine (2018)
- The certification requirements of the Footprint Expert™ Guide

The methodology using The Carbon Trust's Footprint Expert tool was chosen as the outputs of the model included a breakdown of the footprint by activity. This helps to identify hotspots in the lifecycle of the wine products (raw materials, manufacture, distribution, disposal) where there may be potential for further improvements.

The Carbon Trust is well placed to support Lindeman's with this work having unrivalled

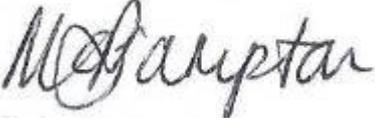
	expertise in life cycle analysis product footprinting, having developed lifecycle footprinting methodologies for, and with, standards bodies and industry sector associations.
Type of conformity assessment:	Independent 3 <sup>rd</sup> Party
Baseline date for PAS 2060 programme:	1 <sup>st</sup> January 2019 to 31 <sup>st</sup> December 2019
Individuals responsible for evaluation and provision of data necessary for declaration:	Meredith Banks Mandy Gerhardy Hannah Dorkin Neville Harris Maria Baeck Camilla Pendleton Ben Blake

## Section 2: Declaration of Achievement of Carbon Neutrality

PAS 2060 Requirement	Client Response
Declaration of achievement:	Carbon neutrality of Lindeman's branded products sold in Europe will be achieved in accordance with PAS 2060 at 2020 for the period commencing 1 <sup>st</sup> January 2019 to 31 <sup>st</sup> December 2019 certified by the Carbon Trust, and will be an on-going commitment going forward beyond this first period.
Recorded carbon footprint of the subject during the period stated above	<i>(tCO<sub>2</sub>e)</i> <b>45,393.27</b>
Carbon footprint reduction target for period	5.65% reduction of the entire measured footprint (2,565 tCO <sub>2</sub> e) for the period 1 <sup>st</sup> January 2020 to 31 <sup>st</sup> December 2020, vs the footprint measured for 1 <sup>st</sup> January 2019-31 <sup>st</sup> December 2019.
Location of GHG emissions report supporting this claim:	<i>Section 4</i>
Location of the Carbon Footprint Management Plan:	<i>Section 5</i>
Location of the details describing the carbon offsets:	<i>Section 5, table 4.</i>
<b>Name of Senior Representative</b>	<b>Senior Representative Signature</b>

Name: Michelle Brampton	
Role: Managing Director, Treasury Wine Estates EMEA Ltd	
Date: 21.10.20	

### Section 3: Declaration of On-going Commitment to Carbon Neutrality (optional)

PAS 2060 Requirement	Client Response
Declaration of on-going commitment:	Carbon neutrality of Lindeman's wines in Europe will be achieved by Treasury Wine Estates Ltd in accordance with PAS 2060 at 2020 for the initial period commencing 1st January 2019 – 31st December 2019, certified by Carbon Trust Assurance, and will be committed to uphold this going forward for years beyond this period.
Carbon footprint of the subject for the period immediately prior to the start of the commitment:	<i>(tCO2e)</i> <b>45,393.27</b>
Carbon footprint reduction target for period.	5.65% reduction of the entire measured footprint <i>(2,565 tCO2e)</i>
Location of GHG emissions report supporting this claim:	<i>Section 4</i>
Location of the Carbon Footprint Management Plan:	<i>Section 5</i>
Name of Senior Representative	Senior Representative Signature
Name: Michelle Brampton	
Role: Managing Director, Treasury Wine Estates EMEA Ltd	
Date: 21.10.20	

### Section 4: Carbon Footprint Breakdown

Guidance: PAS 2060 requires every individual/organisation to provide an appropriate carbon footprint breakdown by scope in their Qualifying Explanatory Statement (QES) in accordance with Greenhouse Gas Protocol guidelines. [Further information on Greenhouse Gas Protocol categorisation for organisational footprints can be found within "Figure 2: Organisational Carbon Footprinting" in the Annex.]

The *Greenhouse Gas Protocol Product Life Cycle Accounting and Reporting Standard* (GHGP Product Standard) was used to quantify the GHG emissions associated with products covered by the certification scope, using data

representing operations between 1st January 2019 and 31<sup>st</sup> December 2019. This method was chosen as it provides an internationally-recognised approach to the calculation of representative product CO<sub>2</sub>e footprints and meets the requirements of PAS 2060 for the substantiation of GHG emissions (PAS 2060: 5.2.2 to 5.2.4). The product CO<sub>2</sub>e footprints have been reviewed and assured by an independent third party, Carbon Trust (see Annex C of this report for the assurance statement).

The carbon footprint was based on 95% of likely greenhouse gas emissions; primary sources are subject to variation over time; footprint is best estimate based on reasonable costs of evaluation.

The carbon footprint was measured using the primary data regarding Lindeman’s products using the EU’s PEF wine footprint method and the international wine carbon calculator protocol version 2 for sector guidance and follow the Internationally recognised PAS 2050 product carbon footprinting methodology, for the period 1st January - 31st December 2019. The total Carbon Footprint to offset (45,393.27 tCO<sub>2</sub>e) was calculated based on a total of 28,282,742 units sold across UK & Ireland, Continental Europe and The Nordics. The weighted average emissions per unit of each country of origin is outlined below:

- Australian Production: 1.61 kgCO<sub>2</sub>e/unit
- Danish Production: 4.33 kgCO<sub>2</sub>e/unit
- South African Production: 1.36 kgCO<sub>2</sub>e/unit
- Spanish Production: 0.97 kgCO<sub>2</sub>e/unit
- UK Production: 1.61 kgCO<sub>2</sub>e/unit
- French Production: 1.36 kgCO<sub>2</sub>e/unit

*Table 1. Offset requirements as per emissions per bottle*

Product	Emission factor (kgCO <sub>2</sub> e / functional unit)	Functional Unit	Units sold	Total kg CO <sub>2</sub> e
LW Bin25 Brut 6x750ml EUR RR 1314 NS	2.18	kg CO <sub>2</sub> e per750ml bottle	86,003	187,486.54
LW Bin30 Spk Rose 6x750ml EUR RR 1314	2.18	kg CO <sub>2</sub> e per750ml bottle	346,876	756,189.68
LW Bin35 Rose 6x750ml EUR SCRR 1314 S	1.62	kg CO <sub>2</sub> e per750ml bottle	488,947	792,093.60

LW Bin40 Mer 6x750ml EUR SCRR 1314 NS	1.65	kg CO2e per750ml bottle	1,485,577	2,451,201.50
LW Bin45 CabS 6x750ml EUR SCRR 1314 NS	1.65	kg CO2e per750ml bottle	1,503,539	2,480,838.80
LW Bin45 CabS 12x375ml EUR SC 1314	1.17	kg CO2e per 375ml bottle	203,061	237,581.76
LW Bin50 Shz 6x750ml EUR SCRR 1314 NS	1.65	kg CO2e per750ml bottle	2,564,791	4,231,904.60
LW Bin55 ShzCab 6x750ml EUR SCRR 1314	1.65	kg CO2e per750ml bottle	181,266	299,088.90
LW Bin65 Chard 6x750ml EUR SCRR 1314	1.59	kg CO2e per750ml bottle	5,005,511	7,958,763.02
LW Bin65 Chard 12x375ml EUR SCRR 1314 NS	1.21	kg CO2e per375ml bottle	353,505	427,741.58
LW Bin85 PinGrig 6x750ml EUR SCRR 1314	1.62	kg CO2e per750ml bottle	1,241,854	2,011,803.48
LW Bin90 Moscato 6x750ml EUR SCRR 1314	1.62	kg CO2e per750ml bottle	171,689	278,135.64
LW Bin95 SauvB 6x750ml EUR SCRR 1314	1.62	kg CO2e per750ml bottle	1,022,691	1,656,758.88
LW Bin99 PinN 6x750ml EUR SCRR 1314 NS	1.59	kg CO2e per750ml bottle	229,827	365,424.40
LW CabS 6x750mL 0.5% EUR SCRR 1314	1.72	kg CO2e per750ml bottle	91,511	157,398.35
LW Caw SemChard 6x750mL EUR SCRR 1314	1.6	kg CO2e per750ml bottle	78,975	126,360.53

LW Caw ShzCab 6x750ml EUR SCRR 1314 NS	1.63	kg CO2e per750ml bottle	182,602	297,640.72
LW EH Rose Lower Alc 5.5% 6x750ml ERC SCRR 1314	1.83	kg CO2e per750ml bottle	32,055	58,660.65
LW EH SemSauvB Lower Alc 5.5% 6x750ml ERC SCRR 1314	1.83	kg CO2e per750ml bottle	15,641	28,623.03
LW SemChard 6x750mL 0.5% EUR SCRR 1314	1.8	kg CO2e per750ml bottle	86,665	155,996.40
LW Spk CPNMuscat 6x750mL 0.5% EUR RR 1314	2.33	kg CO2e per750ml bottle	40,103	93,439.99
LW Chardonnay BiB	4.15	kg CO2e per3L	875,235	3,632,225.25
LW Rose BiB	4.15	kg CO2e per3L	100,953	418,954.95
LW Shiraz Cabernet BiB	4.53	kg CO2e per3L	825,074	3,737,585.22
LW Bin 45 Cab Sav BiB	4.51	kg CO2e per3L	187,041	843,554.91
LW Bin 65 Chardonnay BiB	4.12	kg CO2e per3L	61,934	255,168.08
LW South Africa Cabernet Merlot	1.14	kg CO2e per750ml bottle	1,728,687	1,970,703.18
LW South Africa Chardonnay Viogner	1.02	kg CO2e per750ml bottle	1,063,667	1,084,940.00
LW South Africa Chardonnay Sauv Blanc	1.02	kg CO2e per750ml bottle	1,957,344	1,996,490.88
LW South Africa Shiraz Cabernet	1.14	kg CO2e per750ml bottle	695,868	793,289.52

LW The Discoverer Chardonnay	1.31	kg CO2e per750ml bottle	731,742	958,582.02
LW The Discoverer Shiraz Cabernet	1.39	kg CO2e per750ml bottle	1,006,386	1,398,876.54
LW Varietals Chardonnay	1.31	kg CO2e per750ml bottle	83,225	109,024.31
LW Varietals Shiraz Cabernet	1.39	kg CO2e per750ml bottle	88,200	122,598.00
LW Winemaker's Release Chardonnay	0.71	kg CO2e per750ml bottle	1,074,153	762,648.39
LW Winemaker's Release Shiraz Cabernet	0.71	kg CO2e per750ml bottle	1,288,183	914,609.69
LW Winemaker's Release Spanish White	0.71	kg CO2e per750ml bottle	106,440	75,572.40
LW Winemaker's Release Spanish Red	0.71	kg CO2e per750ml bottle	140,166	99,517.86
LW Bin64 Crisp Chard 6x750ml EUR SCRR 1314	1.59	kg CO2e per750ml bottle	103,038	163,830.42
LW Rielsing PET	1.34	kg CO2e per750ml bottle	176,521	236,538
LW Shiraz Cabernet PET	1.46	kg CO2e per750ml bottle	66,576	97,200.1
LW Chardonnay PET	1.34	kg CO2e per750ml bottle	433,608	581,061.5
LW Bin 50 Shiraz 3L BiB	1.09	kg CO2e per 3L	76,012	82,853.1

	<b>Total</b>	<b>45,393,266.7</b>
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GHG emissions that are accounted for in the study are based on the 100 year Global Warming Potential figures published in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report, 2014 (1) and include those required by the GHGP Product Standard, which specifies emissions to and removals from the atmosphere of: carbon dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>); nitrous oxide (N<sub>2</sub>O); sulphur hexafluoride (SF<sub>6</sub>); perfluorocarbons (PFCs); and hydrofluorocarbons (HFCs). A full list of GHG emissions included in the inventory is provided in Annex D of this report.

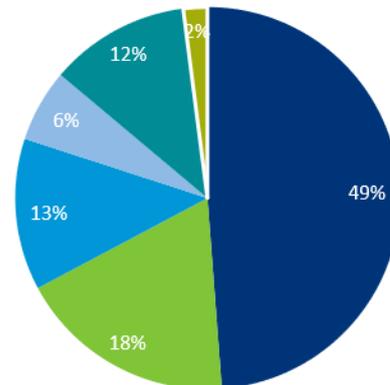
All Scope 1, 2 and 3 emissions relevant to the scope of certification are included in the footprint and are summarised in Table 2 below. Where GHG emissions have been estimated, these have been determined based on a conservative approach that precludes underestimation. GHG emissions have been estimated in particular for the use and end-of-life phases. In the absence of data, emissions have been estimated based on conservative assumptions (e.g. for end-of-life, fate of retail waste has been considered the same as domestic waste whereas waste recycling may be greater at retail areas).

No weighting factors have been included for delayed emissions. Offsetting has not been included in calculations. No avoided emissions have been included in the calculations.

Graph 1 – total lifecycle emissions by country

Country	Units	Footprint
AUS	13,645,308	21,720,351
Skarvin	1,950,201	8,179,245
South Africa	5,273,160	5,709,111
Spain	3,825,132	2,728,559
KDL (AUS)	3,906,252	5,261,168
FRA (AUS)	640,000	898,183

Lindeman's Total Footprint



■ AUS ■ Skarvin ■ South Africa ■ Spain ■ KDL (AUS) ■ FRA (AUS)

(1) [www.ipcc.ch](http://www.ipcc.ch)

Graph 2 – Total footprint by process stage

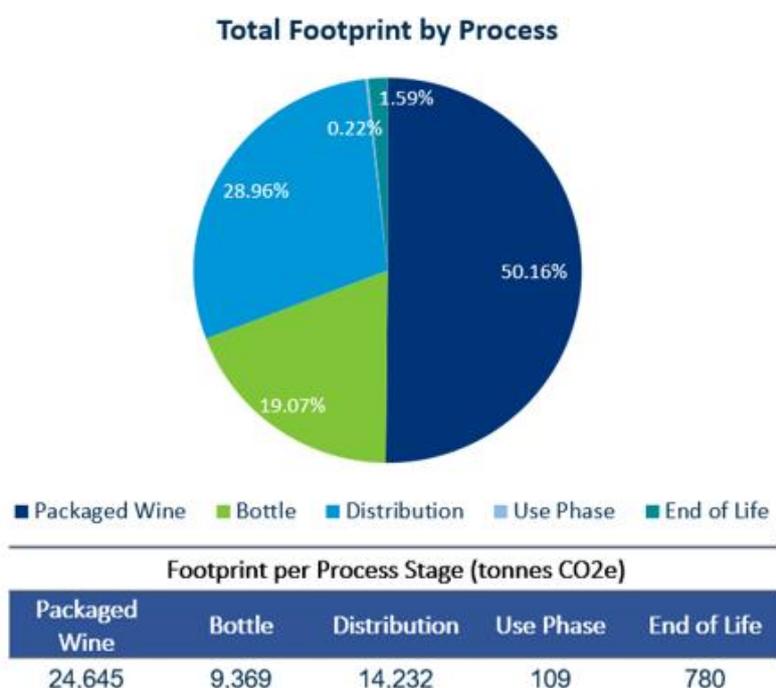


Table 2. Description of GHG emissions

Life cycle stage	Description	GHG Emissions Category	Excluded emissions & Justification
Wine Making (AU, SA, ES)	Raw materials for grape production including fertilisers, chemicals and fuels to manage the vineyard. Processing, materials and ingredients for wine production. Including operational emissions and raw materials for the ingredients. Red, white and sparkling have modelled separately. Upstream transport of grapes to the winery. Outputs including waste, total wine (litres) per country per type (red/white/sparkling/low alcohol) and co-products.	Scope 1 – direct, Scope 2 – indirect, Scope 3 – other indirect emissions	Upstream transport of additional materials (other than grapes) to the vineyards and wineries e.g. fertilisers was deemed immaterial. SA and ES waste has been excluded due to lack of data availability. AU/SA proxy data used for ES fuel use, due to lack of data availability. AU/SA grape making emissions used as proxy for ES White and ES Pale Rose due to lack of data availability. All other scope 3 categories are assumed non attributable to the product.
Wine Packaging (SA, AU, ES, GB, SK, FR)	Processing and materials for wine packaging. Including operational emissions and raw materials for the packaging. Upstream transport of wine to the packaging facility.	Scope 1 – direct, Scope 2 – indirect, Scope 3 – other indirect emissions	Water input, water waste and liquid waste for all countries except for France (Sapin), due to lack of data availability. Waste for AU Sparkling and SK, due to lack of data availability.

	Outputs including waste and total wine (litres) per country per type.		All other scope 3 categories are assumed non attributable to the product. The packaging of wines when transported from the winery to the packaging site (e.g. in flexitanks), has not been included in this footprint. It is likely that the packaging for this phase will be very small and immaterial to the footprint.
Distribution	Transport from packaging site to country of sale. Refrigeration emissions estimated from PEFCR guidance.	Scope 3 – other indirect emissions	Warehousing, as per discussions with TWE. Any fugitive emissions from refrigerants. All other scope 3 categories are assumed non attributable to the product.
Use-phase	Products are used by customers and expected to be stored in a fridge at home (white, rose) or ambient (red). Refrigeration emissions estimated from PEFCR guidance. Electricity consumption emissions for refrigeration based on the grid factor for the country of sale of the wine.	Scope 3 – other indirect emissions	Any fugitive emissions from refrigerants. Transport of the consumer to and from retail facility, as this is assumed not attributable to the product. Manufacture and maintenance of dishwasher and refrigerator, which are considered to be non-attributable to the product. All other scope 3 categories are assumed non attributable to the product.
End-of-life	At end of life the primary packaging is expected to either be sent to landfill or recycling. The following is included in the emissions: <ul style="list-style-type: none"> <li>• Transport of waste packaging to waste facility</li> </ul> Waste packaging treatment via recycling, landfill	Scope 3 – other indirect emissions	Any wine wastage. All other scope 3 categories are assumed non attributable to the product.

## 4.2 Data Methods

### Data sources

Data sources used for the study include a mix of primary and secondary sourced data. Where possible, primary data were sourced. Secondary data were sourced only where primary data were not available or where the relative impact on the carbon footprint result was nominal or deemed non-significant.

Primary data were sourced for all activities where available relating to the certification scope, including:

- Raw materials & Packaging inputs;
- Fuel, electricity and heat including:
  - o The amount of energy used,

- The average emission factor of the energy input (e.g. kgCO<sub>2</sub> e/kg fuel, kgCO<sub>2</sub> e/MJ electricity or heat) based on the source of energy used.
- Distribution from packaging facilities;
- Country of sales.

Secondary data were sourced to support vineyard, winery, distribution, retail, use and end-of-life where primary activity data was not available. The following information sources were used:

- Product Environmental Footprint Category Rules (PEFCR) average data
- PAS 2050 GHG assessment information
- GHG emission factors sourced from reputable published databases including: BEIS, Ecoinvent 3.6, IEA 2019.

### Data quality and uncertainties

A data tracker was used to keep track of the received/missing primary data, some data was uncertain, and quality could be improved. The below processes were missing data for the listed inputs, proxies were used where available.

- GRAPE PRODUCTION:
  - SPAIN:
    - Electricity consumption
    - Fuel consumption
    - Water consumption
    - Herbicide use
- WINE MAKING:
  - AUSTRALIA:
    - Weight transported
    - Transport distance
  - SOUTH AFRICA:
    - Weight Transported
  - SPAIN:
    - Water consumption
    - Fuel consumption
- WINE PACKAGING:
  - AUSTRALIA:
    - Transport of materials
- DISTRIBUTION:
  - UNITED KINGDOM:
    - Total electricity consumption of warehouse
- OTHER:
  - Information on low/no alcohol wine: information on energy consumption for the de-alcoholizer process was provided. Additional information could improve the model robustness.

Table 3. Description of life cycle stages

Life cycle stage	Description	Key Assumptions
Wine Making (AU, SA, ES)	Agricultural process (grape production): - Water use	A sampling plan was developed to estimate the grapes consumption

	<ul style="list-style-type: none"> <li>- Use of fertilisers and pesticides</li> </ul> <p>Manufacturing:</p> <ul style="list-style-type: none"> <li>- Transportation of grapes to the winery</li> <li>- Grapes crushing</li> <li>- Energy, water and waste flows (where available)</li> </ul>	data from vineyards, given the number of vineyards where grapes are sourced. Primary data was used for the most representative and significant vineyards, and extrapolated to the whole production.
Wine Packaging (SA, AU, ES, GB, SK, FR)	<ul style="list-style-type: none"> <li>- Filling operations</li> <li>- Materials, energy, waste</li> </ul>	Materials including glass, paper, cork, cardboard, PET, and others. Primary data on materials use was provided. Greater granularity in data for Australian and French packaging. Information for UK and Skanvin was also provided. Energy includes both electricity and fuels.
Distribution	<ul style="list-style-type: none"> <li>- Transport from factory to retail</li> </ul>	Takes into account country of origin, modes of transportation and final destination markets for the wine. Calculations were based on number of bottles per destination market.
Use-phase	<ul style="list-style-type: none"> <li>- Electricity consumption for wine cooling (whenever the serving temperature is inferior to ambient temperature)</li> </ul>	Average emissions for wine cooling at retail phase were taken from the PEFCR
End-of-life	<ul style="list-style-type: none"> <li>- Glass bottle: recycling, incineration, landfill</li> <li>- PET, cork, aluminium, paper: recycling, incineration, landfill</li> </ul>	End-of-life emissions were estimated using the Carbon Storage & End of Life calculator from the Carbon Trust's Footprint Expert Tool, assuming average emissions for packaging materials.

## Section 5: Carbon Management Plan

PAS 2060 Requirement	Client Response
<i>Statement of commitment to carbon neutrality for the defined subject</i>	Treasury Wine Estates has an ongoing plan to measure and reduce its emissions globally over time, and is committed to achieving Carbon Neutrality for Lindeman's branded products sold in Europe. This commitment is supported by a number of key activities across the business including but not limited to the generation of renewable energy to offset electricity usage at operational sites, the introduction of greater recycled content and light-weighting of packaging.
<i>Timescale for achieving carbon neutrality</i>	Immediately following certification approval (2020)

<p><i>Targets for GHG reduction for the defined subject appropriate to the timescale for achieving carbon neutrality</i></p>	<p>Reduction of 5.65% of the absolute measured carbon footprint for the period 1<sup>st</sup> January 2020 – 31<sup>st</sup> December 2020 through carbon reducing activities outlined below. On-going, we are committed to continuing to reduce our Carbon Footprint each year by at least 3% of the total carbon footprint measured.</p>
<p><i>Planned means of achieving and maintaining GHG emissions reduction including:</i></p> <ul style="list-style-type: none"> <li>• <i>Assumptions made and any justification of the techniques and measures to be employed to reduce GHG emissions;</i></li> <li>• <i>[Optional] Where historical reductions are to be taken into account, the period over which those reductions are to be calculated and confirmation that the necessary data is available and that calculation is to be undertaken using precisely the same methodology as that to be employed to assess and calculate future reductions;</i></li> </ul>	<p>Globally the business tracks, monitors and reports its Scope 1 &amp; 2 emissions under the Australian Governments National Greenhouse &amp; Energy Reporting Scheme (NGERS) program.</p> <p>The targets outlined in this plan will be reviewed and assessed on a quarterly basis in order to track progress and to implement corrective action to ensure targets are achieved.</p> <p>Over the past 12 months the business has reduced its emissions footprint by 3.2% and by 14.4% since F17, which has been delivered through a solid focus on the introduction of solar for the businesses US operations, reducing energy usage across operations through infrastructure efficiency investment, awareness programs (13.2% since F17) and research and development.</p> <p>Over the period of 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2020 and beyond the business will continue to investigate and invest in a number of initiatives to reduce its footprint.</p> <p>In 2020 to reduce the total carbon footprint by the target of 5.65% TWE will focus upon:</p> <ul style="list-style-type: none"> <li>• Existing emissions offset by using between 28% and 40% recycled cullet</li> <li>• Pulse Refrigeration - Energy reduction in pumping efficiencies</li> </ul>

	<ul style="list-style-type: none"> <li>• Continuing to invest in awareness and technology that reduces energy usage at sites</li> <li>• Commencement of Scope 3 review - development of scope and processes</li> </ul> <p>To ensure continuous carbon footprint reduction, over the next 2 years we are planning the following initiatives:</p> <p><b>2021:</b></p> <ul style="list-style-type: none"> <li>• Light-weighting of bottles (Sparkling 680-700gm)</li> <li>• Increasing recycled content of cardboard cartons</li> <li>• Completion of scope 3 review and development of identified actions to drive energy efficiencies</li> </ul> <p><b>2022:</b></p> <ul style="list-style-type: none"> <li>• Solar at TWE Barossa production sites</li> <li>• Lightweighting of bottles (400-380gm)</li> <li>• Energy efficiencies derived from Scope 3 review</li> </ul> <p> </p>
<p><i>If the entity has made offsets and achieved carbon neutrality to-date, a description of these offsets should be provided here. Information should include:</i></p> <ul style="list-style-type: none"> <li>• Which GHG emissions have been offset;</li> <li>• The type of offset and projects involved;</li> <li>• The scheme through which the offsets were made;</li> <li>• The number and type of carbon credits alongside the time period over which the credits were generated and the date(s) of their retirement.</li> </ul>	<p>n/a</p>
<p><i>The offset strategy to be adopted to meet the achievement to carbon neutrality element of PAS 2060. This should include:</i></p> <ul style="list-style-type: none"> <li>• An estimate of the quantity of GHG emissions to be offset;</li> <li>• The nature of the offsets;</li> </ul>	<p>Offset <b>45,393.27</b> tCO<sub>2</sub>e through Verified Carbon Standard (Verra Standard) offset credits:</p> <ul style="list-style-type: none"> <li>- Tree Planting and Reducing Deforestation (REDD+) - 3000 credits</li> </ul>

<ul style="list-style-type: none"> <li>• <i>The likely number and type of credits.</i></li> </ul>	<ul style="list-style-type: none"> <li>- Renewable Energy – Solar Power – 3228 credits</li> <li>- Renewable Energy – Wind Power – 39,166 credits</li> </ul>
<p><i>Statement on the fact that PAS 2060 certification has been provided by a third-party verifier. [Example Q&amp;A statement provided here.]</i></p> <p><i>What type of conformity assessment has been undertaken?</i></p>	<p>Independent 3<sup>rd</sup> Party certification to PAS 2060 has been provided by the Carbon Trust.</p>

## Section 6. Offsets

Table 4. Offsets purchased

Project name	Country	Technology	Standard	Reference No and link	Volume (tCO2e)
UK Tree Planting + Protecting the Amazon	UK + Brazilian Amazon	Reforestation	VCS	Avoided Deforestation Project – Brazil REDD (3000t)  Serial No: 4394-184818073-184821072-VCU-001-MER-BR-14-981-01012009-01012012-0  <a href="https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=118156">https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=118156</a>	3,000
Solar Power Project in Philippines	Philippines	Renewable Energy – Solar Power	VCS	Negros Island – Philippines Solar  Serial No: 5921-266994053-266997280-VCU-029-APX-PH-1-1735-01012017-25112017-0  <a href="https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=31069">https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=31069</a>	3,228
sWind Based Power Generation By Panama Wind	India	Renewable Energy – Wind Power	VCS	Panama Wind Power – India  Serial No: 7966-444589105-444627104-VCU-050-MER-IN-1-1523-02022018-31122018-0 <a href="https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=32051">https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=32051</a>  7966-444683187-444684352-VCU-050-MER-IN-1-1523-02022018-31122018-0  <a href="https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=122531">https://registry.verra.org/myModule/rpt/myrpt.asp?r=206&amp;h=122531</a>	39,166
					Total tonnes offset: 45,394



This certificate acknowledges that  
**Treasury Wine Estates EMEA Ltd**  
offset

**44,228 Tonnes of Carbon Dioxide**

09 October 2020

by supporting the following projects:

Negros Island Solar Power Inc. in Philippines (3,228 tCO<sub>2</sub>e)  
ADPML Portel-Para REDD Project in Brazil (3,000 tCO<sub>2</sub>e)  
Wind Based Power Generation by Panama Wind in India (38,000 tCO<sub>2</sub>e)

and planting 3000 Trees in the UK

John Buckley, Director  
Carbon Footprint Ltd

[www.carbonfootprint.com](http://www.carbonfootprint.com)



**Offsetting carbon emissions  
helping to combat climate change  
sustaining the environment for future generations**



This certificate acknowledges that  
**Treasury Wine Estates EMEA Ltd**

offset

**1,166 Tonnes of Carbon Dioxide**

11 December 2020

by supporting the following project:

Wind Based Power Generation by Panama Wind in India (1,166 tCO<sub>2</sub>e)



Verified Carbon  
Standard  
A VERBA STANDARD

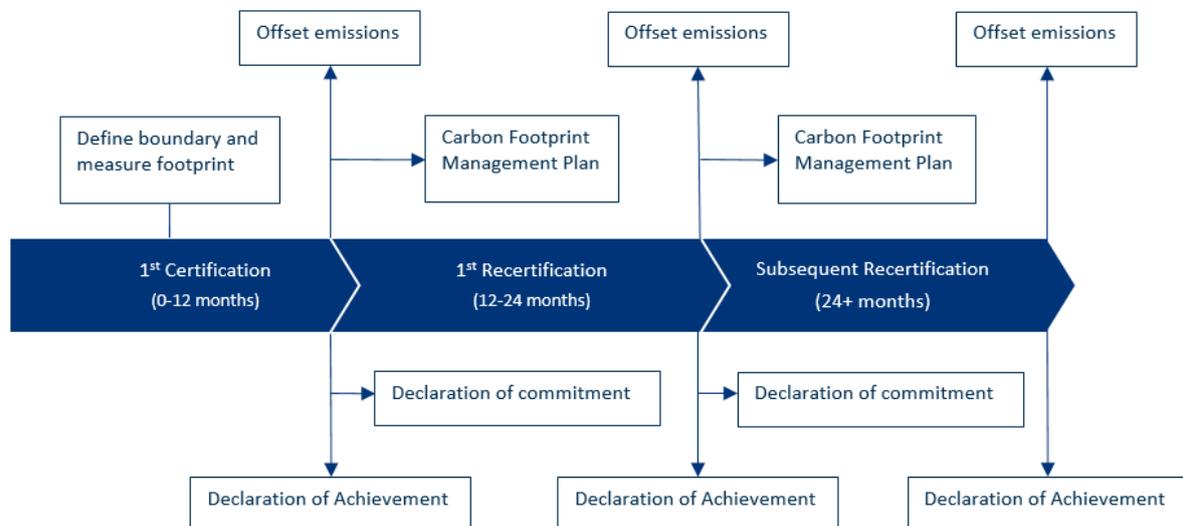
John Buckley, Director  
Carbon Footprint Ltd

[www.carbonfootprint.com](http://www.carbonfootprint.com)

**Offsetting carbon emissions  
helping to combat climate change  
sustaining the environment for future generations**

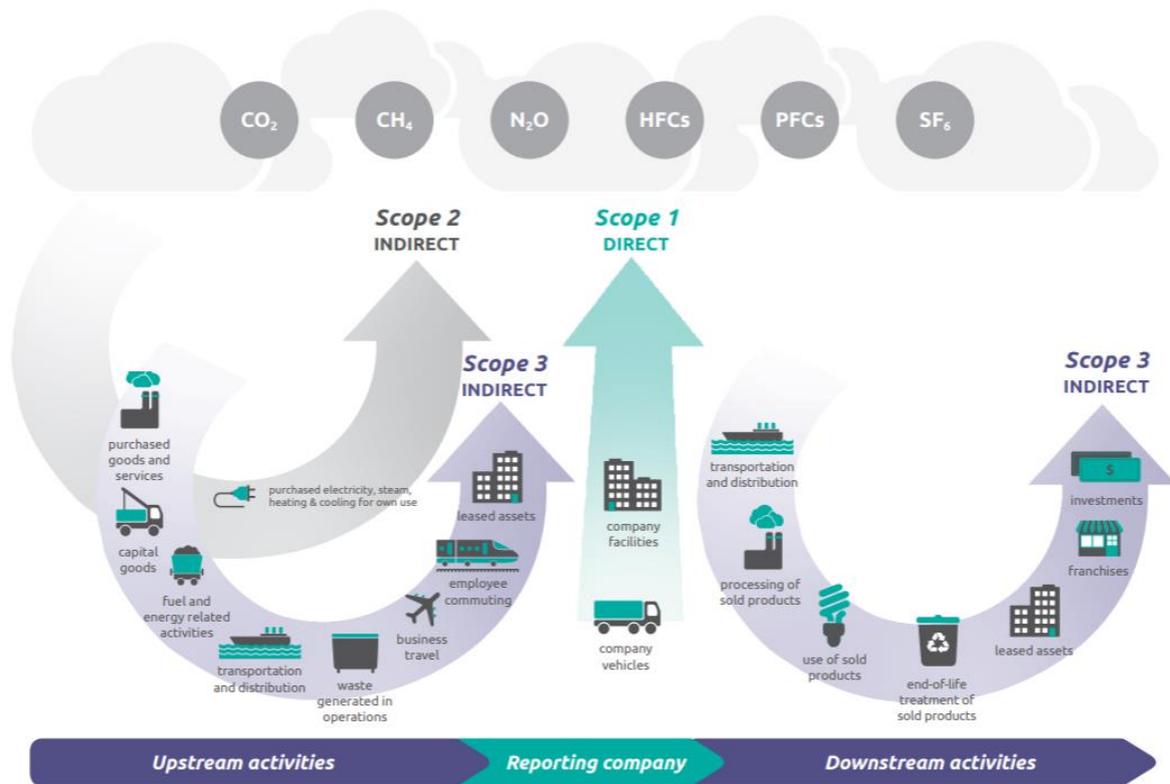
## Annex: Useful additional information

Figure 1: PAS 2060 Certification Process



Source: Carbon Trust. Adapted from “BSI - PAS 2060:2014: *Specification for the demonstration of carbon neutrality: Figure 1 – Illustration of the cyclical process for demonstrating carbon neutrality, taking into account permitted baseline period exceptions*”. [Simplified version]

Figure 2: Organisational Carbon Footprinting



Source: Greenhouse Gas Protocol: *Corporate Value Chain (Scope 3) Accounting & Reporting Standard*. Available from: [http://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](http://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)

### Figure 3: Certificate of Achievement of Neutrality

Source: Product Carbon Neutrality Certification Letter (CERT-XXXXXXX) issued by the Carbon Trust to XXXX on XXXXX.