



**Willow Alexander**

FOR YOUR HOME, YOUR GARDEN, YOUR WORLD®

# Carbon Footprint Report 2021

Published: April 2022



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## 1. Introduction

Willow Alexander Ltd is a garden design studio offering garden design and maintenance services across Kent and the South-East. Since 2016 the company has been making climate-conscious decisions in terms of equipment purchased and used to carry out its services, as well as operating a carbon positive workforce and switching suppliers to natural and organic solutions wherever possible.

In 2022 Willow Alexander opted to formalise these steps by pursuing Carbon Neutral certification across Scope 1, 2 and 3 emissions. In January 2022 Willow Alexander was awarded a One Carbon World Carbon Neutral International Standard grant and in February 2022 was awarded Carbon Neutral status for the reporting period 1<sup>st</sup> January to 31<sup>st</sup> December 2021. As part of this Willow Alexander Ltd also became a participant in the UN's Climate Neutral Now Initiative\*.

This report details Willow Alexander Ltd's carbon footprint and the ways this footprint has been rebalanced. The activities included in the carbon footprint were agreed in consultation between Willow Alexander Ltd and One Carbon World\*\*. The calculation of the footprint was undertaken by One Carbon World after a desktop review of data provided by Willow Alexander Ltd.

Willow Alexander Ltd's Carbon Neutral certification meets the requirements of the Green House Gas (GHG) Protocol Corporate Standard\*\*\* and is compatible with international standards ISO 14064 and PAS 2060.



\*<https://unfccc.int/>

\*\*<https://www.onecarbonworld.com>

\*\*\*<https://ghgprotocol.org/>

## **2. Carbon Footprint Methodology**

Name: Willow Alexander Ltd  
Address: 5 Roberts Mews, Orpington, Kent BR6 0JP  
Description: Garden design and maintenance

Footprint boundary: All activities under operational control, covered under Scopes 1, 2 and 3 of the Green House Gas (GHG) Protocol Corporate Standard required to deliver the Willow Alexander Ltd services as detailed within this report. The GHG Protocol Corporate Standard requires reporting a minimum of scope 1 and scope 2 emissions.

Footprint period: 01/01/2021 to 31/12/2021

### **Activities/Emissions included in footprint:**

- Energy
- Fuel
- Water
- Waste
- Business Travel
- Commuting
- Logistics
- Material Use
- Purchased Goods and Services

### **Scope 1 – Direct GHG Emissions**

Scope 1 (direct emissions) emissions are those from activities owned or controlled by an organisation. Direct emissions are principally the result of the following types of activities:

- Generation of electricity, heat, or steam. These emissions result from combustion of fuels in stationary sources, e.g. boilers, furnaces, turbines
- Transportation of materials, products, waste, and employees. These emissions result from the combustion of fuels in company owned/controlled mobile combustion sources (e.g. trucks, trains, ships, airplanes, buses and cars)
- Fugitive emissions. These emissions result from intentional or unintentional releases, e.g., equipment leaks from joints, seals, packing, and gaskets; methane emissions from coal mines and venting; hydrofluorocarbon (HFC) emissions during the use of refrigeration and air conditioning equipment; and methane leakages from gas transport
- Physical or chemical processing. Most of these emissions result from manufacture or processing of chemicals and materials, e.g. cement, aluminium, and waste processing

### **Scope 1 Emissions data supplied and included in footprint:**

- Total Material use : Chemicals : Fertilizer - Direct Emissions : Per kgN
- Total Fuels : Gaseous fuels : Natural gas kWh (Gross CV) : Energy - Gross CV

## **Scope 2 - Indirect GHG Emissions**

Scope 2 (indirect) emissions are those released into the atmosphere that are associated with the consumption of purchased electricity, heat, steam and cooling. These indirect emissions are a consequence of an organisation's energy use, but occur at sources not owned or controlled.

### **Scope 2 Emissions data supplied and included in footprint:**

- Total UK electricity for Evs : Cars (by size) : Large car km : Battery Electric Vehicle
- Total UK electricity : Electricity generated : Electricity: UK kWh

## **Scope 3 – Other Indirect GHG Emissions**

Scope 3 (other indirect) emissions are a consequence of actions that occur at sources not owned or controlled and not classed as Scope 2 emissions. Examples of Scope 3 emissions are business travel by means not owned or controlled by an organisation, waste disposal, or materials or fuels an organisation purchases. Deciding if emissions from a vehicle, office or factory are Scope 1 or Scope 3 may depend on how operational boundaries are defined.

### **Scope 3 Emissions data supplied and included in footprint:**

- Total WTT- UK & overseas elec
  - WTT UK electricity (T&D) : Electricity: UK kWh
  - WTT- UK electricity (generation) : Electricity: UK kWh
- Total WTT- fuels : WTT- gaseous fuels : Natural gas kWh (Gross CV) : Energy - Gross CV
- Total WTT- freight : WTT- HGV (all diesel) : Articulated (>33t) tonne.km : Average laden
- Total WTT- commuting travel - land
  - WTT- cars (by size) : Medium car km : Petrol
  - WTT- bus : Average local bus passenger.km
- Total Water treatment : Water treatment / cubic metres
- Total Water supply : Water supply / cubic metres
- Total Waste disposal : Refuse
  - Organic: garden waste tonnes : Composting
  - Refuse : Commercial and industrial waste tonnes : Closed-loop
- Total UK electricity T&D for EVs : Cars (by size) : Large car km : Battery Electric Vehicle
- Total Transmission and distribution : T&D- UK electricity : Electricity: UK kWh
- Total Money Value to CO<sub>2</sub>e
  - Wholesale and retail trade and repair services of motor vehicles and motorcycles / costs
  - Wearing apparel / costs
  - Warehousing and support services for transportation / costs
  - Telecommunications services / service costs
  - Printing and recording services / service costs
  - Other professional, scientific and technical services / costs
  - Office administrative, office support and other business support services / costs
  - Manufacture of cement, lime, plaster and articles of concrete, cement and plaster costs.

- Total Money Value to CO2e / cont.
  - Machinery and equipment n.e.c. / costs
  - Manufacture of cement, lime, plaster and articles of concrete, cement and plaster costs
  - Machinery and equipment n.e.c. / costs
  - Insurance, reinsurance and pension funding services, except compulsory social security & Pensions / costs, except compulsory social security & Pensions
  - Glass, refractory, clay, other porcelain and ceramic, stone and abrasive products - 23.1-4/7-9 / costs
  - Forestry products / costs
  - Financial services, except insurance and pension funding / costs, except insurance and pension funding
  - Agriculture products : Crop Costs
  - Advertising and market research services / service costs
  - Accounting, bookkeeping and auditing services; tax consulting services : Financial consulting service costs
- Total Material use : Chemicals : Fertilizer - In-Direct Emissions : Per kgN

### **Footprint Calculation Method**

The most common approach for calculating GHG emissions is through the application of documented and approved GHG emissions conversion factors. These factors are calculated ratios that relate GHG emissions to a proxy measure of activity at an emissions source.

Further detail on emissions factors and the methodology behind them can be found at <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

The activity data or amount of 'resources' used are multiplied by the relevant emissions factors to calculate total Greenhouse Gas equivalent (CO2e) emissions.

$$\text{GHG emissions} = \text{activity data} \times \text{emission conversion factor}$$

There are seven main GHGs that contribute to climate change, as covered by the Kyoto Protocol: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>). Different activities emit different gases and an organisation should report on the Kyoto Protocol GHG gases produced by its activities.

CO<sub>2</sub>e is the universal unit of measurement to indicate the global warming potential (GWP) of GHGs, expressed in terms of the GWP of one unit of CO<sub>2</sub>. The GWPs used in the calculation of CO<sub>2</sub>e are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) over a 100-year period (this is a requirement for inventory/national reporting purposes).

All conversion factors used in this report are in units of kilograms of carbon dioxide equivalent (kg CO<sub>2</sub>e).

**Emissions factors used in footprint calculation:**

- DEFRA Conversion Factors Full Set for Advanced Users 2021
- Defra / One Carbon World
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

**Assumptions and/or Omissions:**

- Water consumption estimated at 30 litres per day across the year across 312 days.
- Commuting - 3 members of staff are collected en-route to the warehouse/jobs in company vans therefore this is covered under Business travel mileage.
- Commuting Car - estimated as medium sized vehicle
- All EVs allocated as 'Large Car'
- 'Other Waste' – assumed as 'Commercial and Industrial' general waste
- - Emissions associated with the application of fertilizers has been calculated using the "2019 Refinement to the 2006 IPCC Guidelines for National GHG Inventories: Chapter 11" methodology. Due to the unavailability of more recent and site-specific fertilizer emissions factors, confidence in the emissions totals for fertilizers is low.
- Nitrogen fertilizer converted to kgN using 3.6% N content
- Global Warming Potential of N<sub>2</sub>O taken as 298
- Working From Home (WFH) - emissions calculation applies the methodology set out in the 'Homeworking Emissions White Paper'<sup>\*</sup>. The methodology takes the number of working hours from home during the reporting period and applies a 150W per working station to estimate electricity consumption.
- WFH heating assumed as required for 30% of working hours at 5kW/h heat demand
- Well to Tank Scope 3 emissions associated with extraction, refining and transportation of raw fuels and Transmission and distribution (T&D) Scope 3 emissions associated with grid losses (the energy loss that occurs in getting the electricity from the power plant to the organisations that purchase it), are included in the footprint calculations.

**Additional actions taken by Willow Alexander:**

- Willow Alexander operates a 'carbon positive workforce' through its membership of Ecologi<sup>\*\*</sup>.

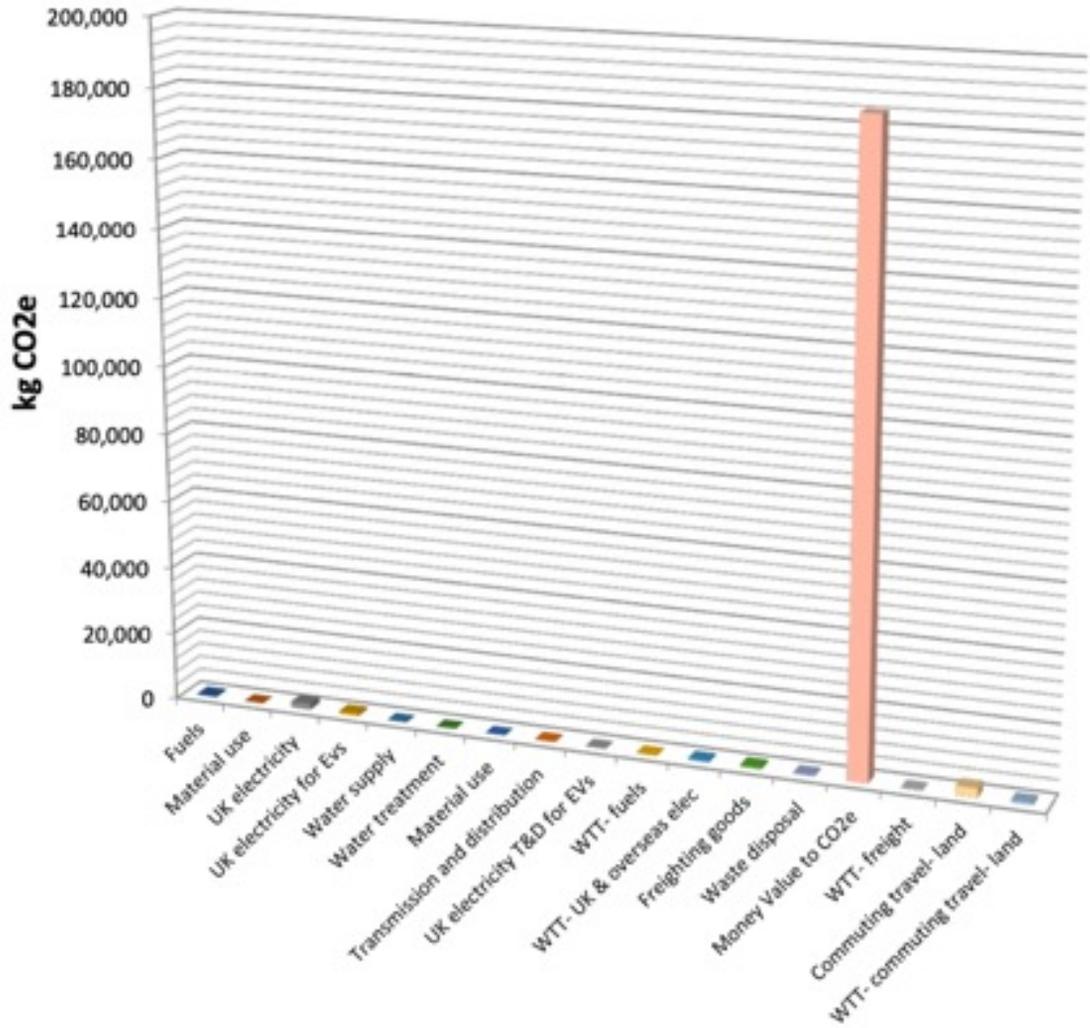
<sup>\*</sup><https://info.eco-act.com/en/homeworking-emissions-whitepaper-2020>

<sup>\*\*</sup><https://www.ecologi.com>

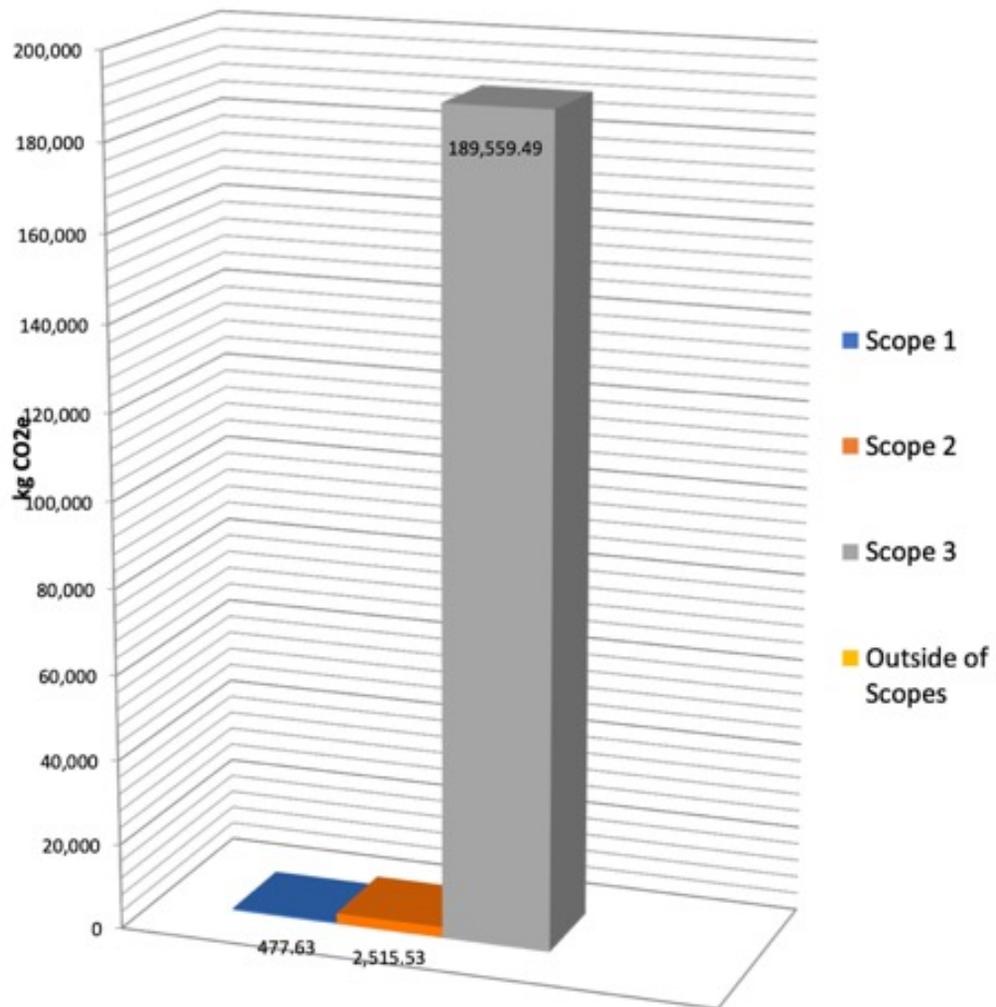
### 3. Carbon Footprint

The Total Carbon Footprint of the activities measured = **192.55 tonnes CO2e**

#### Sources of CO2e by emission activity



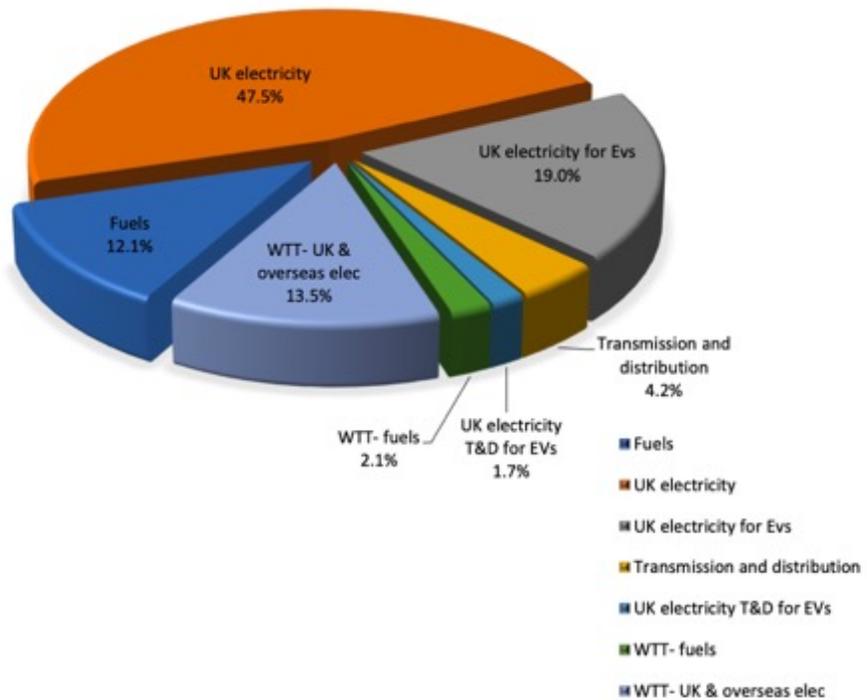
## Sources of CO2e emissions by GHG Protocol Scope



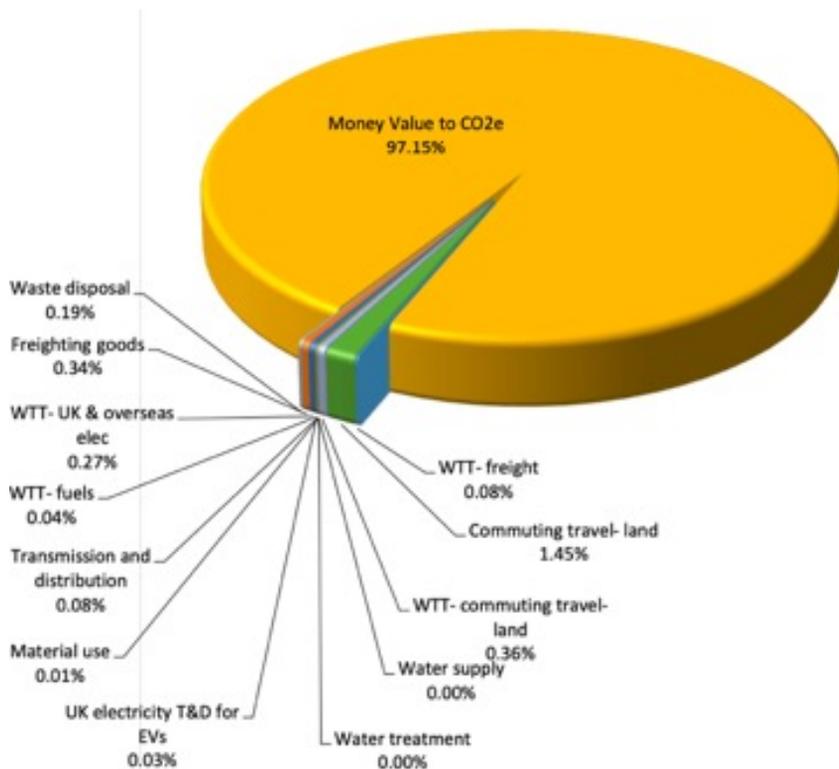
This figure shows the distribution of Willow Alexander Ltd's emissions between Scope 1, 2 and 3. Scope 1 and 2 are relatively evenly distributed whereas Scope 3 is significantly higher, accounting for over 97% of all emissions.

## Footprint Detail:

### Sources of CO2e emissions by Energy & Fuel Use



### Sources of CO2e by Indirect Emissions (Scope 3)



**Activities / Emissions included in footprint:**

<b>Activity Type</b>	<b>Total Tons CO<sub>2e</sub></b>
CO <sub>2e</sub> emissions from Commuting travel- land	2.74
CO <sub>2e</sub> emissions from Freighting goods	0.64
CO <sub>2e</sub> emissions from Fuels	0.46
CO <sub>2e</sub> emissions from Material use	0.04
CO <sub>2e</sub> emissions from Purchased Goods, Materials and Services	184.15
CO <sub>2e</sub> emissions from Transmission and distribution	0.16
CO <sub>2e</sub> emissions from UK electricity	1.80
CO <sub>2e</sub> emissions from UK electricity for Evs	0.72
CO <sub>2e</sub> emissions from UK electricity T&D for EVs	0.06
CO <sub>2e</sub> emissions from Waste disposal	0.36
CO <sub>2e</sub> emissions from Water supply	0.00
CO <sub>2e</sub> emissions from Water treatment	0.00
CO <sub>2e</sub> emissions from WTT- commuting travel- land	0.68
CO <sub>2e</sub> emissions from WTT- freight	0.15
CO <sub>2e</sub> emissions from WTT- fuels	0.08
CO <sub>2e</sub> emissions from WTT- UK & overseas elec	0.51
<b>Total Emissions tCO<sub>2e</sub></b>	<b>192.55</b>
<b>Neutralised by Carbon Credits From Projects tCO<sub>2e</sub></b>	<b>193.00</b>
<b>Total Net Emissions tCO<sub>2e</sub></b>	<b>0.0</b>
<b>Result</b>	<b>Carbon Neutral</b>

## **Carbon Credit Retirement**

To achieve carbon neutrality 193 tCO<sub>2</sub>e has been offset through the retirement of 193 Voluntary Carbon Credits from 'La Pitanga/Weyerhaeuser Forest Plantation.

La Pitanga/Weyerhaeuser Forest Plantation is located in Uruguay. The aim of this project is to convert degraded grassland with a long history of cattle grazing into beneficial forest plantations which will aid in restoring the land, by improving the soil quality through water retention and delivery of micronutrients to the soil, and by preventing soil erosion. In this reforestation project the healthy and well-managed forests help the planet adapt to a changing climate by providing critical storm water management, ecosystem services, and wildlife habitat. Additional benefits include creating of approximately 260 jobs during the agrarian phase, benefiting more than 70 farmers from the project farms, reducing rural poverty and geographic decentralisation, and supporting rural schools.

The project has achieved the Verified Carbon Standard (VCS) for certifying carbon emissions reductions administered by Verra. This project is also certified by the Forestry Stewardship Council (FSC) and is verified by the Rainforest Alliance's SmartWood programme.

To date an estimated 4.5 million trees have been planted in the project and, until 2021 this project has sequestered approximately 9M tons of CO<sub>2</sub>.

## **Additional measures taken by Willow Alexander**

As part of Willow Alexander's membership of Ecologi, since 2020 1,395 trees have been planted and 96.36 tonnes of CO<sub>2</sub>e have been offset. This has supported 30 projects:

- NativeEnergy Clean Water Central America, Haiti
- Guanare Forest Plantations on Degraded Land, Uruguay
- Solar power in Maharashtra, India
- Zoba Debub Community Boreholes, Eritrea
- 100 MW Wind Power Project in Andhra Pradesh, India
- AgroCortex REDD+ Avoided Unplanned Deforestation, Brazil
- REDD+ Project for Caribbean Guatemala: The Conservation Coast
- Ishasha 6.6 MW Small Hydropower Project, Uganda
- Wayang Windu Phase 2 Geothermal Power Project, West Java, Indonesia
- NIHT Topaiyo REDD+, Papua New Guinea
- Changbin and Taichung wind power, Taiwan
- Kariba REDD+, Zimbabwe
- Papop Biogas and Renewable Energy, Thailand
- Honduras cookstoves, Honduras
- Katingan Peatland Restoration and Conservation, Indonesia
- SamSun Landfill Gas to Energy, Turkey
- Brazil Nut Concessions, Peru
- Improved kitchen regimes in East Africa, Zambia & Ghana
- Biomass based cogeneration project at Seasons, India
- Vietnam Quang Minh solar project, Vietnam

- Bajo Calima y Bahia Malaga (REDD+ Avoided Unplanned Deforestation Project, Colombia
- Rimba Raya Peatland Conservation, Indonesia
- Suzlon 8.4MW wind power project, India
- Vinales Biomass power plant, Chile
- Saint Nikola Wind Farm, Bulgaria
- Generating Solar energy in Tamil Nadu and Telangana, India
- Bac Lieu Province Wind Power Plant, Vietnam
- West Huaybong wind farm, Thailand
- 4.80 MW Aleo Manali Hydropower project
- Improving the Efficiency of Delhi's Transport System, India

## 4. Carbon Management Plan

The most significant sources of CO<sub>2</sub>e emissions identified are emissions arising from purchased goods, materials and services (97% of total). Procurement of products used in operation is therefore an important support mechanism in delivering the Willow Alexander Ltd decarbonisation objectives.

While the Willow Alexander Ltd carbon footprint is very robust in terms of methodologies and data applied, emissions associated with purchased materials, goods and services have been based on procurement expenditure. This approach applies average emissions per monetary value of goods to calculate the associated carbon emissions. This is a recognised approach and helps to highlight 'hot spot' areas where emissions are the highest.

For this reporting period Willow Alexander's primary 'hot spot' areas was the purchasing of plants and soil, accounting for 92% of the total carbon footprint.

In 2022 areas for reduction include, but are not limited to:

- Engaging with core suppliers (specifically plant suppliers) to discuss whether carbon footprint data specific to their products is available
- Switching to a renewable energy supplier following a move to new premises

### Emissions Reduction Targets

Following the 2021 carbon footprint baseline, Willow Alexander's next steps will include a commitment to reduction targets and strategy in line with the UN Climate Neutral Now framework. This will ensure that Willow Alexander Ltd aligns with global goals of limiting temperature increases to 1.5°C above pre-industrial levels:

Willow Alexander Ltd commits to:

- Reduce its carbon footprint with an aim to being net zero by 2030
- Reduce emissions by 50% of baseline by 2026, or by 10% per year
- Develop and implement a strategy to achieve these short-, mid- and long-term targets
- Conduct an ongoing review of emissions against targets to track progress and ensure continued alignment with climate science

Appendix 1



**Appendix 1, cont.**

**CLIMATE  
NEUTRAL  
NOW**

ACHIEVEMENT 2021	
MEASURE	● GOLD
REDUCE	● BRONZE
CONTRIBUTE	● GOLD
JOINED 2022	

## Appendix 2





**Verified Carbon  
Standard**

### Certificate of Verified Carbon Unit (VCU) Retirement

Verra, in its capacity as administrator of the Verra Registry, does hereby certify that on 21 Mar 2022, 97 Verified Carbon Units (VCUs) were retired on behalf of:

Willow Alexander Ltd.

**Project Name**  
"Weyerhaeuser Uruguay" Forest Plantations on degraded grasslands under extensive grazing

**VCU Serial Number**  
9857-148504968-148505064-VCS-VCU-261-VER-UY-14-960-01012009-31122009-0

**Additional Certifications**

Powered by  APX





**Verified Carbon  
Standard**

### Certificate of Verified Carbon Unit (VCU) Retirement

Verra, in its capacity as administrator of the Verra Registry, does hereby certify that on 17 Mar 2022, 93 Verified Carbon Units (VCUs) were retired on behalf of:

Willow Alexander Ltd.

**Project Name**  
"Weyerhaeuser Uruguay" Forest Plantations on degraded grasslands under extensive grazing

**VCU Serial Number**  
9857-148503357-148503449-VCS-VCU-261-VER-UY-14-960-01012009-31122009-0

**Additional Certifications**

Powered by  APX

## Appendix 2, cont.



### Certificate of Verified Carbon Unit (VCU) Retirement

Verra, in its capacity as administrator of the Verra Registry, does hereby certify that on 02 Mar 2022, 3 Verified Carbon Units (VCUs) were retired on behalf of:

Willow Alexander Ltd.

**Project Name**

"Weyerhaeuser Uruguay" Forest Plantations on degraded grasslands under extensive grazing

**VCU Serial Number**

9570-109479422-109479424-VCS-VCU-261-VER-UY-14-960-01012009-31122009-0

**Additional Certifications**

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