Willow Alexander

FOR YOUR HOME, YOUR GARDEN, YOUR WORLD®

Carbon Footprint Report 2022

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1. Introduction

Willow Alexander Ltd is a home and garden service provider based in 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 2021 Willow Alexander opted to formalise these steps, gaining Carbon Neutral status across Scope 1, 2 and 3 emissions with One Carbon World and joining the UN's Carbon Neutral Now initiative*. As part of this Willow Alexander also put in place reduction targets with the goal of being net zero by 2030 and reducing emissions by 50% of baseline by 2026, or by 10% per year.

In 2022, Willow Alexander underwent a period of transition to set the foundations for significant growth in 2023 and beyond. This has involved expanding beyond the existing garden maintenance and design studio to create a nationwide franchise network offering home services including home and garden maintenance, cleaning and dog walking. Willow Alexander has also invested in building a personal offsetting platform to complement and drive the franchise offering, while providing clients with ongoing education about reduction tactics.

This report details Willow Alexander Ltd's carbon footprint for 2022 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:	01/01/2022 to 31/12/2022

Activities/Emissions included in footprint:

- Agriculture
- Commuting
- Homeworking
- Logistics – Non-Owned Vehicles
- Materials
- Purchased Goods & Services
- Waste
- Water
- Fuel & Energy

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 : 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)
- Total WTT- freight : WTT- HGV (all diesel) : All rigids tonne.km : Average laden
- Total WTT- commuting travel - land
    - WTT- cars (by size) : Small car km
    - Battery Electric Vehicle
    - 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 : Combustion
- Total Transmission and distribution : T&D- UK electricity : Electricity: UK kWh
- Total Money Value to CO2e
    - Wholesale and retail trade and repair services of motor vehicles and motorcycles / costs
    - Wearing apparel / costs
    - Telecommunications services / costs
    - Services to buildings and landscape / costs
    - Security and investigations services / costs
    - Road Transport / costs
    - Printing and recording services / service costs
    - Postal and courier services / 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
    - Legal services / costs
    - Insurance, reinsurance and pension funding services, except compulsory social security & pensions / costs
    - 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
    - Education services / costs
    - Agriculture products : Crop Costs
    - Advertising and market research services / service costs
    - Accounting, bookkeeping and auditing services / costs
    - Chemicals : Fertilizer – In-direct emissions : per kgN
    - Homeworking (office equipment + heating) : per FTE working hour
    - Freighting goods : HGW (all diesel) : All rigids tonne.km : Average laden
    - Commuting travel – land : Cars (by size) : Small car km : Battery
    - Electric Vehicle
    - Commuting travel – land : Bus : Average local bus passenger.km

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.

GHG emissions = activity data x emission conversion factor

There are seven main GHGs that contribute to climate change, as covered by the Kyoto Protocol: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6) and nitrogen trifluoride (NF3). Different activities emit different gases and an organisation should report on the Kyoto Protocol GHG gases produced by its activities.

CO2e 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 CO2. The GWPs used in the calculation of CO2e 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 CO2e).

Emissions factors used in footprint calculation:

- Supplier Specific (Opus Energy)
- DEFRA Conversion Factors Full Set for Advanced Users 2022
- Defra / One Carbon World
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- International Fertiliser Society (2019)

Assumptions and/or Omissions:

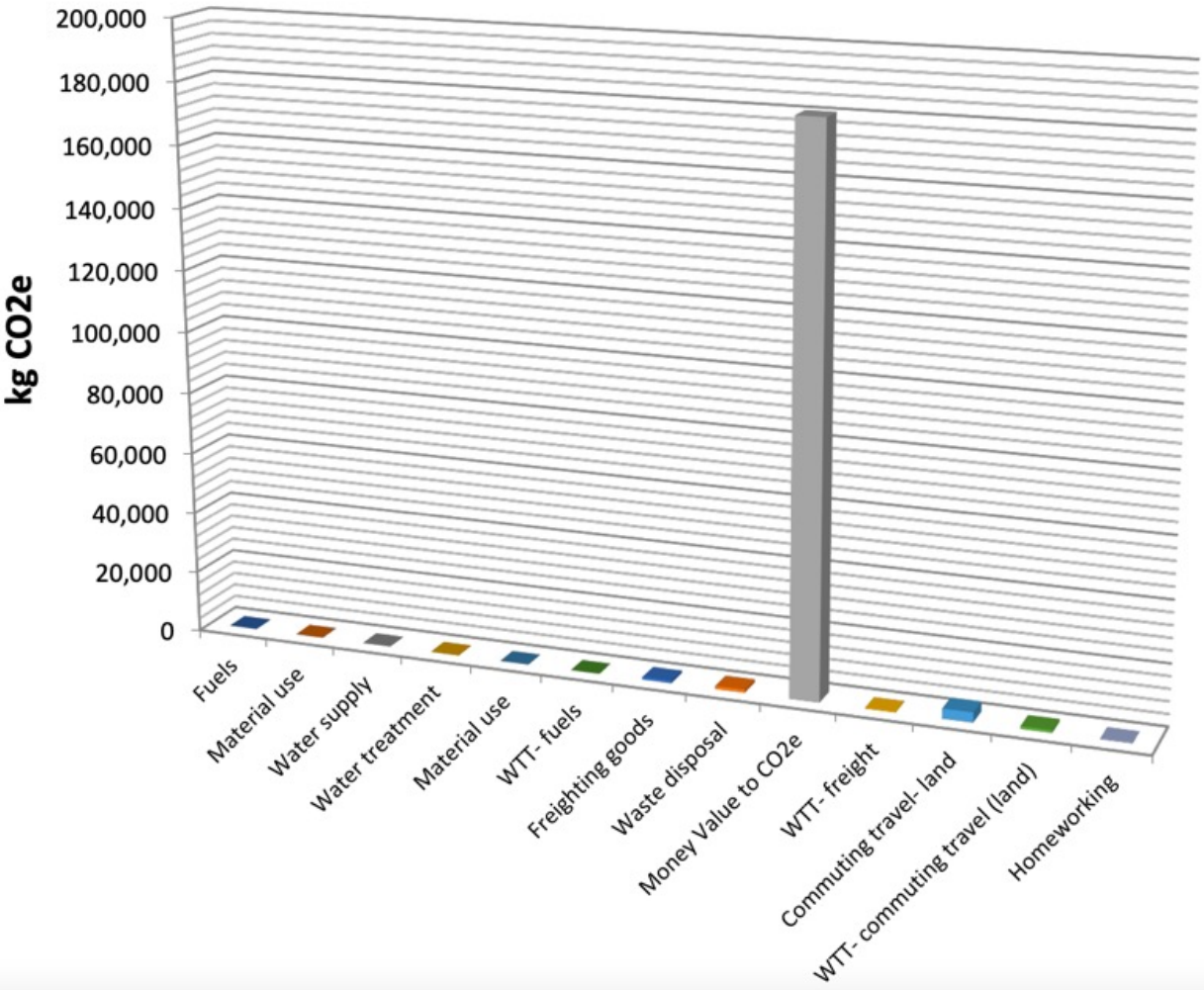
- Owned vehicles: electric vans charged on-site and therefore associated emissions are captured within electricity use.
- Waste – Other: allocated as combustion for energy recovery.
- Commuting: car allocated as small (market segment B).
- Logistics – Inbound: assumed to be average laden consolidated delivery.
- Commuting: Willow Alexander offset workforce through Ecologi until 01/09/2022.
- Fertilizer: liquid fertilizer converted into N based on 3.6% N content. Soil conditioner converted to N based on 4.1% N content.
- 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 emission factors, confidence in the emissions totals for fertilizers is low.
- Conversion of P to P205 and K to K20 taken from the referenced source*.
- Water consumption estimated at 30 litres per day across the year across 312 days.
- P and K – emissions factors have been allocated as 'global average'.
- 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.

*https://www.yara.co.uk/crop-nutrition/farmers-toolbox/conversion-calculator

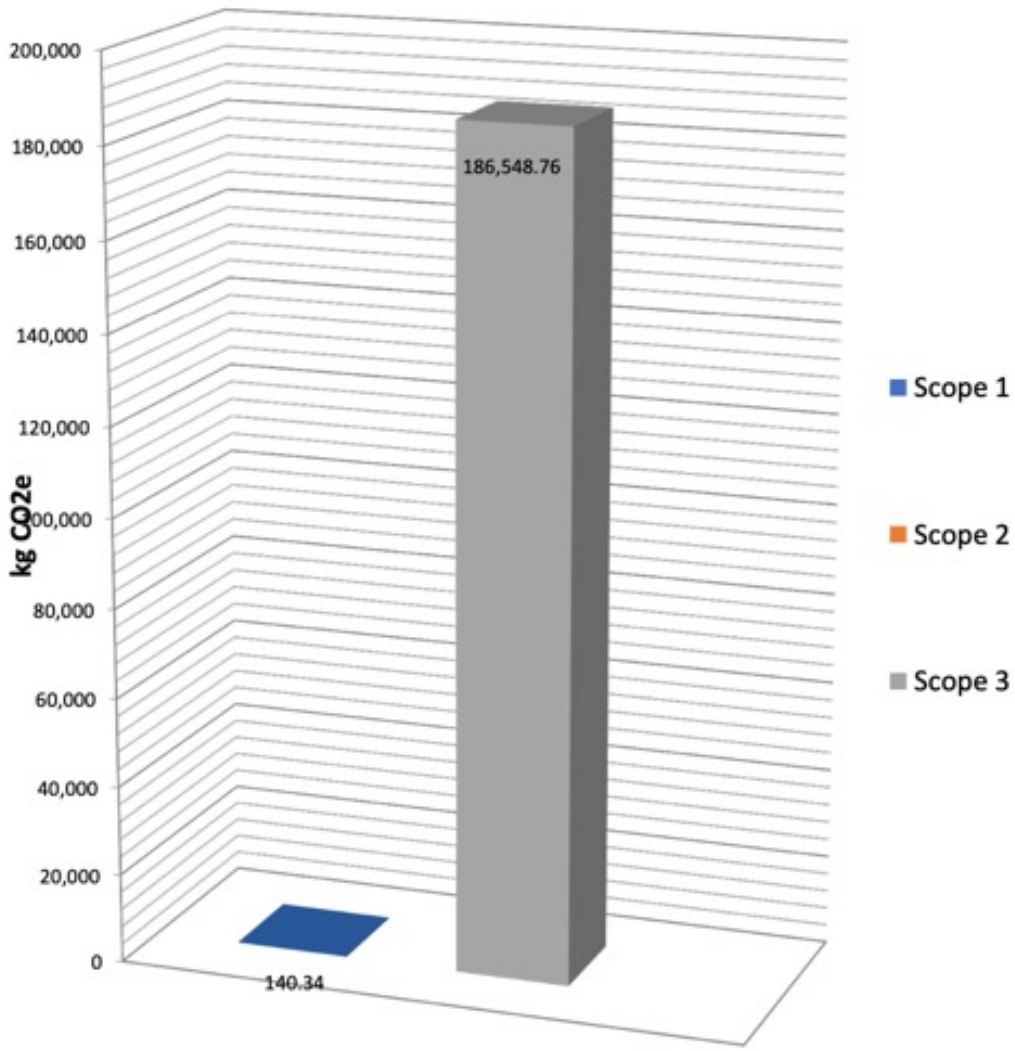
3. Carbon Footprint

The Total Carbon Footprint of the activities measured = **186.69 tonnes CO2e**

Sources of CO2e by emission activity



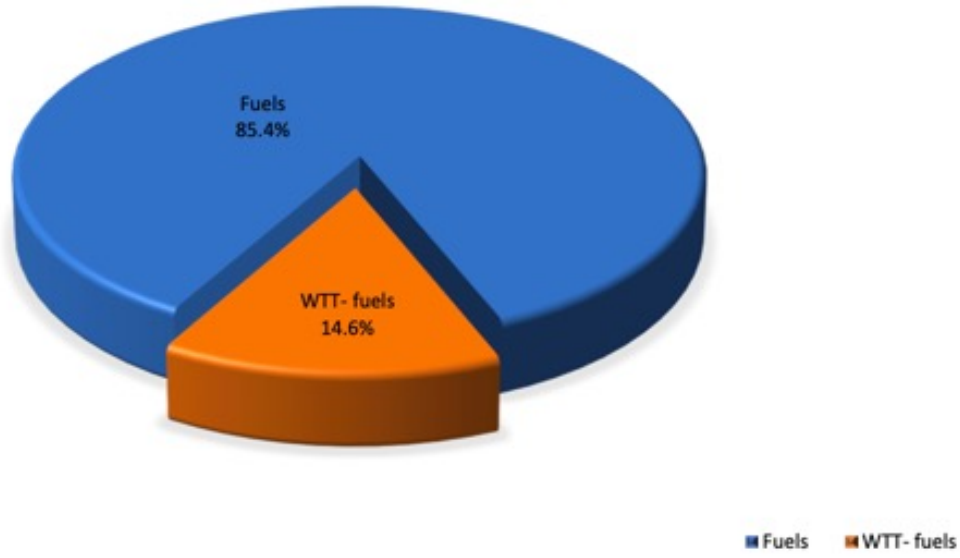
Sources of CO2e emissions by GHG Protocol Scope



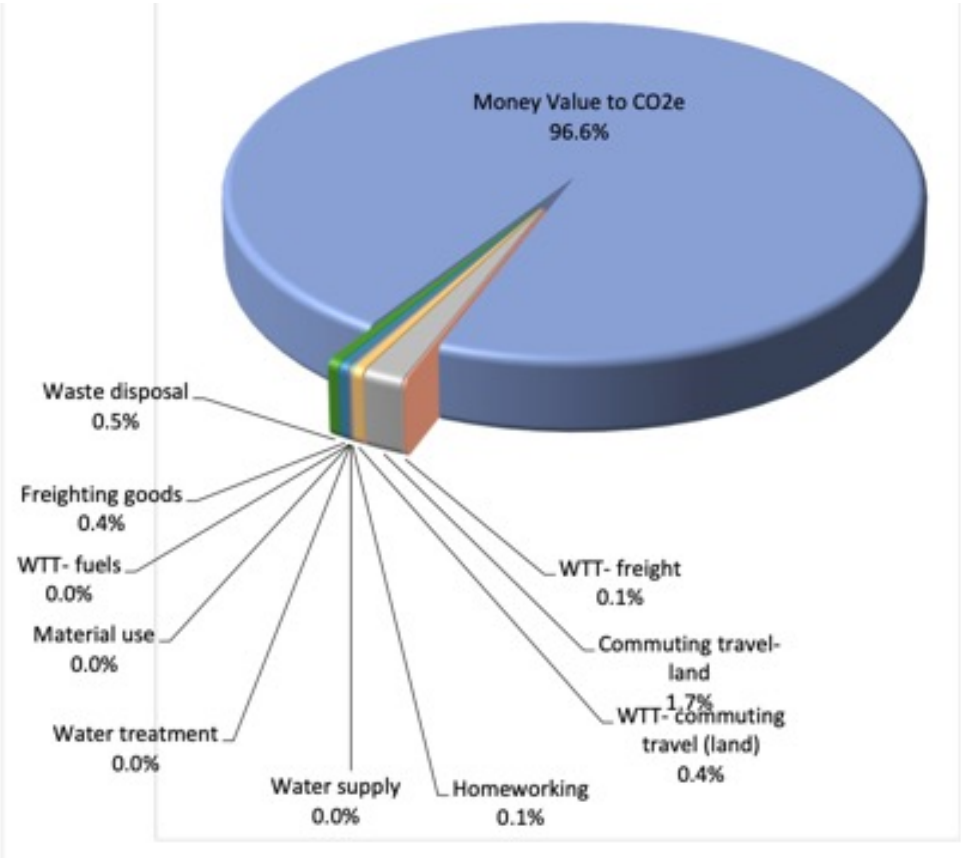
This figure shows the distribution of Willow Alexander Ltd's emissions between Scope 1, 2 and 3. Emissions directly controlled by Willow Alexander have been minimised to best practice with 140.34kg CO2e of Scope 1 emissions and 0kg of Scope 2 emissions. Scope 3 is significantly higher, accounting for over 97% of all emissions.

Footprint Detail:

Sources of CO2e emissions by Energy & Fuel Use

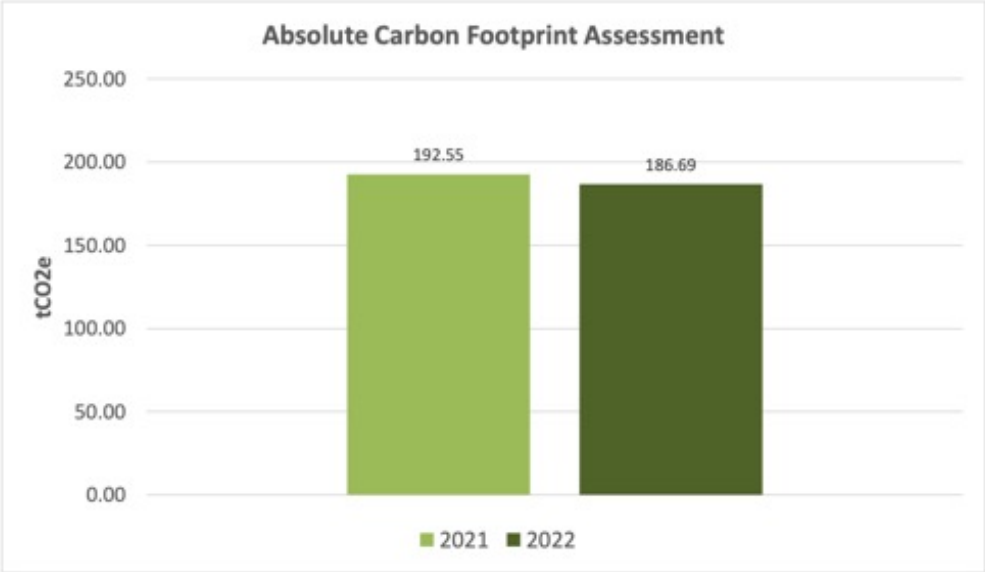


Sources of CO2e by Indirect Emissions (Scope 3)

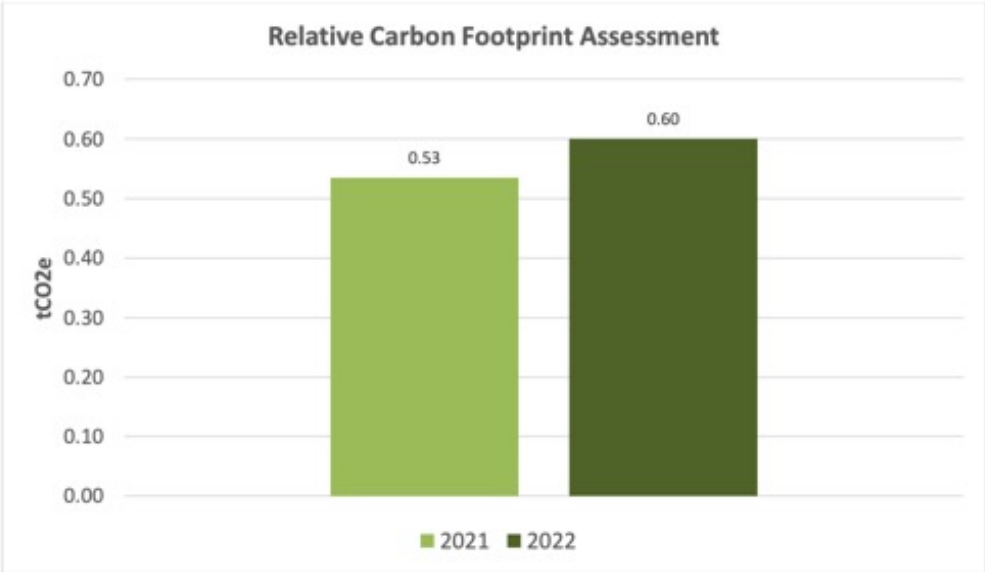


Footprint Detail:

Carbon Footprint Year on Year Comparison



On an absolute basis, the total aggregated emissions in 2022 were stated as 186.69 tCO2e (-3%) compared with 192.55 tCO2e in 2021.



On a relative basis, using the performance indicator for Willow Alexander Ltd the relative total emissions in 2022 were stated as 0.60 tCO2e per £'000 of turnover (+12%) compared with 0.53 tCO2e in 2021.

Carbon Footprint Breakdown:

Scope kg CO2e Summary Table

Activity	Total kg CO2e	Total Tons CO2e
Scope 1	140.34	0.14
Scope 2	0.00	0.00
Scope 3	186,548.76	186.55
Outside of Scopes	0.00	0.00
Total	**186,689.10**	**186.69**

Activities / Emissions included in Footprint:

Activity Type	Total Tons CO2e
CO_2e emissions from UK electricity	0.00
CO_2e emissions from Fuels	0.12
CO_2e emissions from Material use	0.02
CO_2e emissions from Water Supply	0.04
CO_2e emissions from Water Treatment	0.08
CO_2e emissions from Money Value to CO_2e	180.2
CO_2e emissions from Material Use	0.02
CO_2e emissions from WTT Fuels	0.02
CO_2e emissions from Freighting Goods	0.77
CO_2e emissions from Waste Disposal	0.97
CO_2e emissions from WTT - Freight	0.18
CO_2e emissions from Commuting travel- land	3.23
CO_2e emissions from WTT- commuting travel (land)	0.84
CO_2e emissions from Homeworking	0.21
Total Emissions tCO_{2e}	**186.69**
Neutralised by Carbon Credits From Projects tCO_{2e}	**188**
Total Net Emissions tCO_{2e}	**0**
Scope 1, 2 & 3 Result	**Carbon Neutral**

Carbon Credit Retirement

To achieve carbon neutrality 188 tCO2e has been offset through the retirement of 188 CERs from a project that is part of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change and has been authorised under Article 12 of the Kyoto Protocol.

Saving the ozone layer – Western India

Fugitive emissions are among the most potent and long-lived ozone depleting substances and gases that can enter the Earth's atmosphere. Hydrofluorocarbon 23 (HFC 23) is one of these, and is a key material that is used in refrigeration and as feedstock for PTFE. This project has developed and built facilities that now capture HFC gases into substances with no or lower global warming potential.

Social and economic benefits – SDGs 1, 2, 3, 8, 9, 10

- Contributes to the development of the local economy and job creation, particularly in rural areas which is a priority concern for the Government of India.
- Creates employment opportunities in these areas has long been recognised as key for stainable development and to stem the mass exodus from rural to urban areas.
- Indirectly increases income security of vulnerable section of society through redistribution benefits associated with the project.
- Improves micro-economic efficiency of the sector through various innovations.

Environmental benefits – SDGs, 6, 11, 13

- Significant reductions in GHG emissions.
- Contributes to the construction of water management structures like check dams which directly supports the mitigation of water and natural resources scarcity in and around the project areas.

This is the world's first industrial CDM project certified by the CDM Executive Board. The project is a technical collaboration between the UK, Switzerland, Netherlands, Italy, Japan and India.

Additional measures taken by Willow Alexander

As part of Willow Alexander's membership of Ecologi, since 2020 1,753,trees have been planted and 122.44 tonnes of CO2e has been avoided. Below are some examples of the types of projects that Willow Alexander has supported via ecologi in 2022.

- Solar power project in Vietnam
- Wind power project in South Africa
- Planting forest gardens in Tanzania
- Generating renewable solar energy in Egypt
- Planting trees and supporting water security in Kenyan forests
- Preventing deforestation in the Democratic Republic of Congo
- Protecting and restoring Andrean Forests in Bolivia
- Restoring Polylepsis Forests in the Ecuadorean Andes
- Restoring Andean Forests in Argentina
- Restoring Andrean Polylepis Forests in Peru
- Wind power project in Mexico
- First ever wine power project in Honduras
- Saving endemic Moroccan fruit tree species
- Conserving rainforest in the Western Amazon
- Generating renewable wine energy in Brazil
- Solar power generation across India
- Rainforest conservation in Brazil
- Improving the efficiency of metro transport in India
- Generating clean electricity from hydropower in India
- Producing electricity from wind power in Northeast Thailand

4. Carbon Management Plan

In 2022 Willow Alexander made the following changes to reduce its carbon footprint:

- Office – Willow Alexander moved to a new premises in Q1 2022 that brought all business activities under the same roof and ensured greater control and streamlining of suppliers, deliveries, commuting etc.

- Suppliers – Willow Alexander expanded its supplier network as the business has expanded and only works with new partners who align with its own sustainability-centric vision. Willow Alexander has also worked within its existing supply chain to encourage partner businesses to examine their own sustainability initiatives and report on this.

- Team – Willow Alexander has operated a climate positive workforce in 2022, initially through its partnership with Ecologi and subsequently by bringing this in-house through Sustainabli+.

- Operations – Willow Alexander has continued to seek ways to further reduce its footprint from an operational standpoint. It has developed a roadmap to ensure that as it expands those who work with them are contractually obliged to follow these guidelines.

In 2022 Willow Alexander has achieved best practice in Scope 1 and 2 emissions with a footprint of less than 0.2 tCO2e.

As in 2021, the most significant sources of CO2e emissions identified are emissions arising from purchased goods, materials and services (97% of total). Procurement of products used in operation is the element of operations over which Willow Alexander has least control, however, it remains an important support mechanism in delivering the overall 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 86% of the total carbon footprint. This is a reduction of 4% from 2021.

In 2023 Willow Alexander will continue to engage with core suppliers (specifically plant suppliers) to discuss whether carbon footprint data specific to their products is available. This will allow for a more accurate calculation of related emissions and the scope to pinpoint reduction tactics.

Emissions Reduction Targets

In 2022 Willow Alexander was able to reduce it's carbon footprint by 3%. This is less than the 10% set out as part of its 2021 reduction targets. Noting that 2022 was a year of expansion for the company including doubling the staff head count and investing heavily in R&D, marketing and specialist professional services.

Willow Alexander has therefore revised it's targets for 2023 and beyond. These science-based targets align with the UN Climate Neutral Now framework and will ensure that Willow Alexander Ltd supports global goals of limiting temperature increases to 1.5°C above pre-industrial levels:

Willow Alexander Ltd commits to:

- Maintain best practice in Scope 1 & 2 emissions
- Reduce its Scope 3 carbon footprint with an aim to being net zero by 2040
- Reduce Scope 3 emissions by 50% of baseline by 2030, or by 22% per year
- Develop and implement a strategy to achieve these short-, mid- and long-term targets, primarily engaging with Scope 3 suppliers
- Conduct an ongoing review of emissions against targets to track progress and ensure continued alignment with climate science

Appendix 1


CARBON NEUTRAL
TM
INTERNATIONAL STANDARD


CARBON NEUTRAL CERTIFIED
2023
ONE CARBON WORLD
2023

United Nations
Framework Convention on
Climate Change

DATE: 9 MAY 2023
REFERENCE: VC27927/2023

VOLUNTARY CANCELLATION CERTIFICATE

Presented to
Willow Alexander Ltd.

Project
Project for GHG emission reduction by thermal oxidation of HFC 23 in Gujarat, India.

Reason for cancellation
I want to contribute to climate action.

Number of units cancelled

188 CERs

Equivalent to 188 tonne(s) of CO_2

Start serial number: IN-5-171579014-1-1-0-1 End serial number: IN-5-171579201-1-1-0-1

The certificate is issued in accordance with the procedure for voluntary cancellation in the CDM Registry. The reason included in this certificate is provided by the cancellor.

Appendix 1, cont.