

# Willerby

L A N D S C A P E S



## Willerby Landscapes Ltd. Carbon Footprint Report 2021

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**PURPOSE OF REPORT**

The purpose of this report is to highlight and detail the Carbon Footprint of Willerby Landscapes Ltd, for the year 2021. This report will be used as a comparison for subsequent years and will analyse how Willerby Landscapes yearly carbon emissions have changed in comparison to the figures presented in this report.

Please note, this report has been written retrospectively, in January 2024 and published in June 2024, therefore some reference may be made to 2022 and after.

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Signature 

Date 14/06/2024

Checked and authorised by

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Date

16/07/2024

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## **INTRODUCTION**

Willerby Landscapes have committed to the following Science Based Target:

- 42% reduction of Scope 1 and Scope 2 emissions by 2030 from a 2020 baseline.
- Monitor and Reduce Scope 3 emissions.

Willerby Landscapes consider these targets to be a minimum requirement and strive to exceed the reduction target. Whilst the target states 42% reduction of Scope 1 and Scope 2 emissions combined, Willerby Landscapes have also targeted a 42% reduction of each scope individually as well to ensure that, although Scope 1 emissions will be the priority, Scope 2 emissions are not ignored.

Additionally, although Scope 3 emissions do not have a baseline figure, nor is there a reduction target, the Scope 3 emissions will be reviewed, recorded and will be reduced as much as feasibly possible, both as a total figure and individually. This report is being written retrospectively, therefore Scope 3 emissions are not available at time of writing for the reported year, however processes and procedures are being developed to allow for accurate recording of emissions.

In relation to this report, Willerby Landscapes also have an analysis document that is used to compare carbon emissions per year from 2020. The comparison document is an internal spreadsheet that is regularly reviewed and updated; the spreadsheet analyses overall carbon emissions, spilt into the respective Scopes, as well as individual emission contributors as set out in the 2021 DEFRA GHG Conversion Factors spreadsheet such as specific fuels and waste types. (*Department for Environment, Food & Rural Affairs, 2021*)

Regular meetings are held with the directors of Willerby Landscapes to review carbon emission figures and discuss any successes or failures relating to reduction techniques. These meetings will drive policy and procedure throughout the company, and highlights that the commitment to the Science Based Target starts at the top of the company.

Willerby Landscapes are accredited to ISO14001:2015 and therefore have an effective Environmental Management System of which this report forms part of. Willerby Landscapes have set this target to demonstrate the commitment to reducing the associated carbon emissions and align to objectives set as part of the ISO14001:2015 accreditation. Willerby Landscapes want to be part of the solution to climate change and therefore transparency in reporting and commitment to emissions reduction in whatever manner is vital to success. Communication of carbon reduction targets and progress, not necessarily this report in its entirety, will be undertaken at regular periods; these periods have not yet been determined nor has the communication method.

This report has been written in accordance with the requirements set out in the government's "Environmental Reporting Guidelines 2019". This report has been written to include all emission figures that form part of the "Operational Control Boundary", which is defined in the Environmental Reporting Guidelines 2019 as "...[an] organisation [that] has operational control over an operation if [the] organisation...has the full authority to introduce and implement its operating policies at the operation." (*Department for Environment, Food & Rural Affairs, 2019*). Additionally, this report has been aligned with the recommendations detailed in the "SBTi Corporate Manual". (*Science Based Targets, 2023*)

## **DEFINITIONS**

**Carbon Footprint**: a measure of the amount of carbon dioxide released into the atmosphere as a result of the activities of particular individual, organisation, or community. *(Oxford Dictionaries, 2023)*

**Scope 1**: ...(direct emissions) emissions are those from activities owned or controlled by your organisation. Examples of Scope 1 emissions include emissions from combustion in owned or controlled boilers, furnaces, and vehicles; and emissions from chemical production in owned or controlled process equipment. *(Department for Environment, Food & Rural Affairs, 2021)*

**Scope 2**: ...(energy indirect) emissions are those released into the atmosphere that are associated with your consumption of purchased electricity, heat, steam, and cooling. These indirect emissions are a consequence of your organisation's energy use, but occur at sources you do not own or control. *(Department for Environment, Food & Rural Affairs, 2021)*

**Scope 3**: ...(other indirect) emissions are a consequence of your actions that occur at sources you do not own or control and are not classed as Scope 2 emissions. Examples of Scope 3 emissions are business travel by means not owned or controlled by your organisation, waste disposal, materials or fuels your organisation purchases. Deciding if emissions from a vehicle, office, or factory that you use are Scope 1 or Scope 3 may depend on how you define your operational boundaries. Scope 3 emissions can be from activities that are upstream or downstream of your organisation. More information on Scope 3 and other aspects of reporting can be found in the Greenhouse Gas Protocol Corporate Standard *(Department for Environment, Food & Rural Affairs, 2021)*

**Outside of Scopes**: Outside of scopes includes biogenic CO<sub>2</sub> factors that should be used to account for the direct carbon dioxide (CO<sub>2</sub>) impact of burning biomass and biofuels, including when reporting emissions from electricity consumption. Biogenic CO<sub>2</sub> emissions are one of several activities labelled 'outside of scopes' by the GHG Protocol Corporate Accounting and Reporting Standard because the Scope 1 impact of these fuels has been determined to be a net '0' (since the fuel source itself absorbs an equivalent amount of CO<sub>2</sub> during the growth phase as the amount of CO<sub>2</sub> released through combustion). *(Department for Environment, Food & Rural Affairs, 2022)*

**ABBREVIATIONS**

<b><u>Abbreviation</u></b>	<b><u>Definition</u></b>
CO <sub>2</sub>	Carbon dioxide
kgCO <sub>2</sub> e	Kilograms of Carbon dioxide equivalent
tCO <sub>2</sub> e	Tonnes of Carbon dioxide equivalent
DERV	Diesel Engine Road Vehicle
ULSD	Ultra Low Sulphur Diesel
WTT	Well-to-Tank
HVO	Hydrotreated Vegetable Oil

## **METHODOLOGY**

Data was collected through invoices, delivery notes, utility bills and other similar documentation. These figures were then recorded on a spreadsheet and separated out to highlight the different sources of emissions. These different sources include the following:

- Bridge Nursery Fuels
- Fleet Fuel
- Site Fuel
- Jerry Can Fuel
- 55 Maltings Natural Gas
- Train Travel
- Other Travel
- Private Mileage

The data was then cross-examined, and identical fuels were combined to create total figures. These total figures were then multiplied by the corresponding emissions factors derived from the 2021 DEFRA GHG Conversion Factors spreadsheet. The figures were calculated in kgCO<sub>2</sub>e units and then divided by 1000 to provide a tCO<sub>2</sub>e figure. This methodology follows the instructions detailed in the 2021 DEFRA GHG Conversion Factors spreadsheet.

Once each individual fuel type had been given a total figure, these were then added together to provide a total figure per Scope.

Once all scopes had a figure, these were then added together to provide a total figure for the year 2021.

Please note that Scope 3 emissions are not available for the year 2021 as information isn't as readily available as Scope 1 and Scope 2 emissions.

## **ASSUMPTIONS & INFORMATION**

### General

- Assumed that carbon footprint figures have been calculated correctly,
- Assumed that carbon emissions figures have been calculated correctly,
- Assumed no data is missing,
- Electricity usage on site is not included in this report as usage figures are not available,
- Assumed that electricity usage on sites fall under Client's Scope 3 emissions,
- Water usage on site is not included in this report as usage figures are not available,
- Assumed that water usage on sites fall under Client's Scope 3 emissions,

### Scope 1

- Assumed DERV and Forecourt Diesel are the same fuel type,
- Assumed Kerosene and Burning Oil are the same fuel type,
- Assumed Jerry Can fuel is unleaded petrol,
- Assumed Gasoil is Red Diesel,
- Assumed Unleaded fuel is being used for power tools on site,

### Scope 2

- N/A

### Scope 3

- N/A

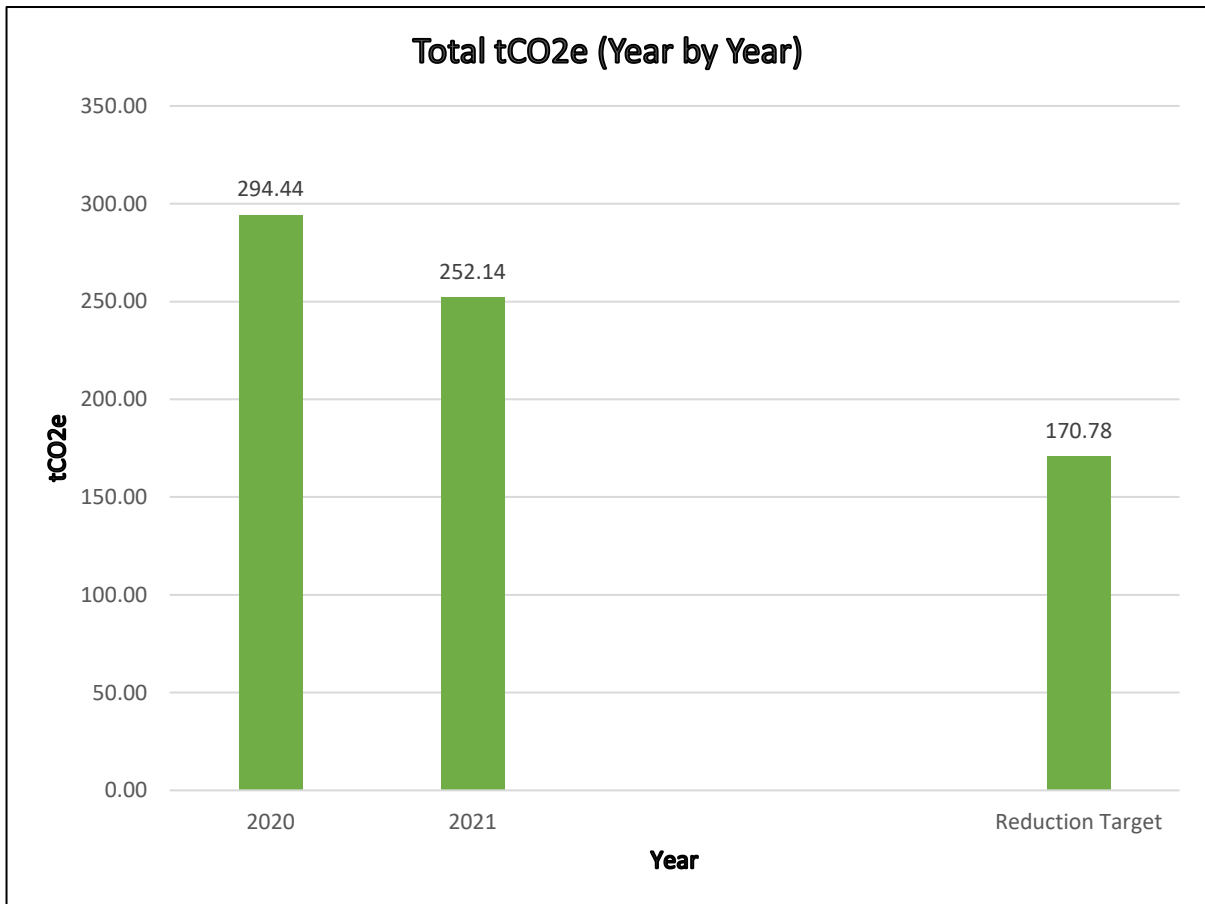
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**ANNUAL TREND**



Graph #1: Graph comparing the total Scope 1 and Scope 2 Carbon emissions from 2020 and 2021.

	2020	2021
Fuel type	tCO2e	tCO2e
Gasoil	41.30986592	32.09044481
Burning Oil	13.37261296	8.38754228
DERV	167.5949453	87.15006463
Diesel (ULSD)	48.56806828	110.5550817
Unleaded	5.201838787	2.097027055
Natural Gas (m3)	1.52306298	0
HVO Biodiesel	0	0.03212874
Electricity (kWh)	16.87187552	11.85608254
<b>Total</b>	<b>294.4422698</b>	<b>252.1683717</b>

Table #1: Table comparing emissions from individual fuel and energy sources between 2020 and 2021.

## Analysis

From the above, the total emissions reduced by approximately 40tCO<sub>2</sub>e from the 2020 to 2021. There weren't any reduction methods in place during 2021, however the enforced lockdowns and movement restrictions resulting from the COVID-19 pandemic may have had an impact in fuel and energy usage.

Each fuel and energy type has a significant reduction figure from 2020 to 2021, this includes diesel; although Diesel (ULSD) has increased significantly across this time period, the combined totals for diesel (DERV & Diesel (ULSD)) results in a reduction of ~18tCO<sub>2</sub>e.

Please note that the use of HVO biodiesel was a contractual requirement for a specific construction project and is unlikely to feature in the subsequent yearly reports, as this wasn't a reduction method that had come in to force during this reporting period.

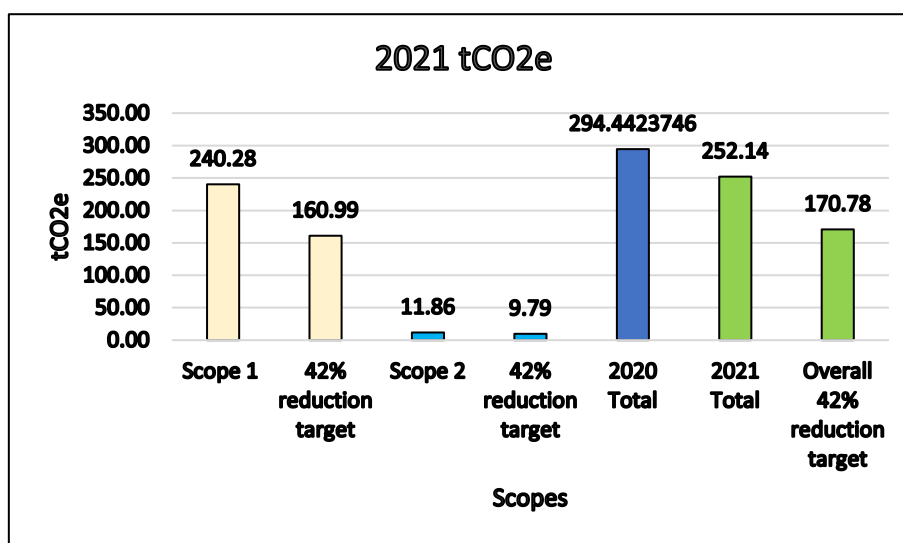
Although the figures hint at a positive reduction, this shouldn't be considered a trend that will continue in the subsequent years as the nationwide restrictions stated previously, will have had a direct impact of movement opportunities; with the restrictions being lifted during 2022, the figures are likely to increase following a return to "normal" operating procedures.

Please refer to Appendix A and Appendix B for yearly comparison graphs for individual fuel types.

## 2021 CARBON FOOTPRINT OVERVIEW

2021 tCO <sub>2</sub> e		
Scope 1	240.28	95%
42% reduction target	160.99	
Scope 2	11.86	5%
42% reduction target	9.79	
2020 Total	294.4423746	100%
2021 Total	252.14	86%
Overall 42% reduction target	170.78	58%

Table #2: Table showing Scope 1, Scope 2, and Total emissions figures for 2021 and percentage progress against 2020 baseline figure



Graph #2: Bar graph showing Scope 1, Scope 2, and Total emissions figures for 2021 comparable against 2020 baseline figure

The above table and graph show the overall 2021 carbon emissions figures along with the respective reduction targets for both the individual scopes against the 2020 baseline figure.

From the above table and graph, Scope 1 emissions continue to be the priority reduction target with figures accounting for 95% of total 2021 emissions.

Individually, 2021 Scope 1 and Scope 2 emissions have reduced ~13% and ~30% respectively from 2020, with total Scope 1 and Scope 2 emissions 14% lower than in 2020.

Scope 1 figures have been taken from the following locations:

- Fuels supplied to Bridge Nurseries
- Fuels purchased at forecourts for use in fleet vehicles
- Fuels used on construction sites
- Fuels used in Operational Facilities (Bridge Nurseries/55 Maltings Place)

Scope 2 figures have been taken from the following locations:

- Electricity used at Operational Facilities (Bridge Nurseries/55 Maltings Place)

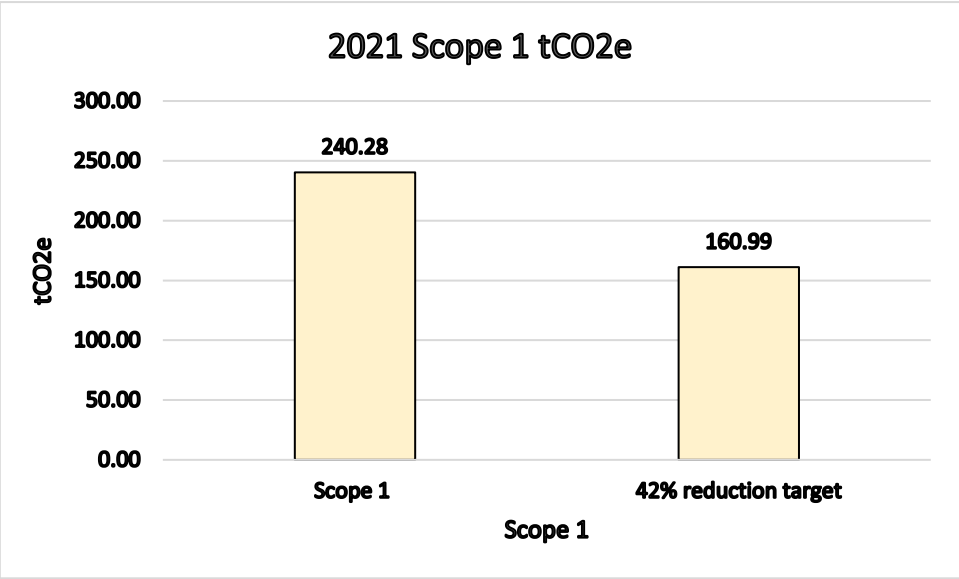
Scope 3 elements have not been calculated for the year 2021.

## SCOPE 1

### RESULTS

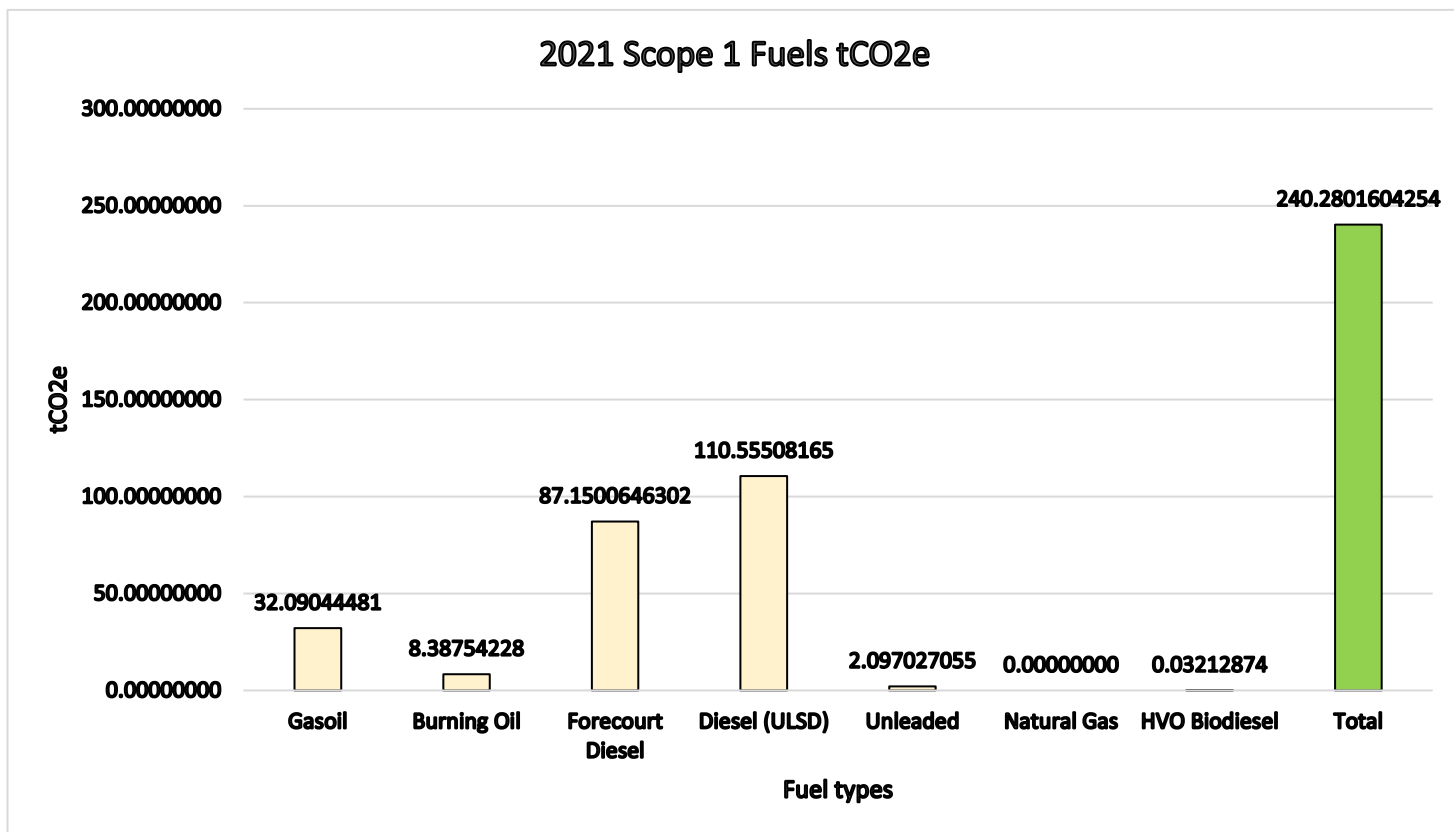
SCOPE 1					
Raw Data					
	Fuel type	Litres	kgCO2e conversion factor	kgCO2e	tCO2e
Yard Fuels	Gasoil	9262	2.75857	25550	25.54987534
	Kerosene	0	2.54014	0	0.00000000
	Burning Oil	3302	2.54014	8388	8.387542
	Derv	0	2.51233	0	0.00000000
	Diesel (ULSD)	44005	2.51233	110555	110.55508165
Fleet Fuel	Forecourt Diesel	34,688.94	2.51233	87150	87.1500646302
Site Fuel	Gasoil	2371	2.75857	6541	6.540569
	Burning Oil	0	2.54014	0	0.000000
	Red HVO	903	0.03558	32	0.032129
Jerry Can Fuel	Unleaded	956.01	2.19352	2097	2.097027055
55 Maltings Gas	Natural Gas	0	2.02135	0	0.00000000
Adjusted Data					
	Fuel type	Litres	kgCO2e conversion factor	kgCO2e	tCO2e
	Gasoil	11633	2.75857	32090.44	32.09044481
	Burning Oil	3302	2.54014	8387.54	8.38754228
	Forecourt Diesel	34,688.94	2.51233	87150.06	87.1500646302
	Diesel (ULSD)	44005	2.51233	110555.08	110.55508165
	Unleaded	956.01	2.19352	2097.03	2.097027055
	Natural Gas	0.00	2.02135	0.00	0.00000000
	HVO Biodiesel	903.00	0.03558	32.13	0.03212874
	Total				240.2801604254

Table #2: Table showing Scope 1 raw and adjusted data for 2021



Graph #3: Bar Chart showing overall Scope 1 data for 2021

## 2021 Scope 1 Fuels tCO2e



Graph #4: Bar Chart showing individual fuel data for 2021

The above table and graphs highlight the overall Scope 1 emissions and emission contributors for Willerby Landscapes in 2021. Please note the below

- DERV, Forecourt Diesel and ULSD are considered the same fuel type, however, the fuels are separated at the “Raw Data” sections for two reasons; firstly, forecourt diesel is used as fleet fuel and is only sourced at forecourts; secondly, DERV and ULSD are separated because during the year 2020, different fuel suppliers were used and the names for the fuel were different for each company. In 2021, the term DERV is used for continuity purposes only, and will be removed in the 2022 report.
  - At the “Adjusted Data” section, DERV and ULSD are combined to form the “Diesel (ULSD)” fuel, this is because the term “ULSD” will be the only term for Diesel used at Bridge Nurseries.
- Kerosene and Burning Oil are considered the same fuel type; however, the fuels are separated at the “Raw Data” sections different fuel suppliers were used and then names for the fuel were different for each company.
  - At the “Adjusted Data” section Kerosene and Burning Oil are combined to form the “Burning Oil” fuel, this is because the term “Burning Oil” will be the only term for Burning Oil and equivalent fuels.
- 55 Maltings is a secondary office located in London, England and is the only location that uses Natural Gas. In 2021, the lease to 55 Maltings was no longer renewed by Willerby Landscapes therefore no fuel figures are available. In 2021, 55 Maltings and Natural Gas is used for continuity purposes only, and will be removed in the 2022 report.

The Scope 1 fuels highlighted above are used in the following processes:

- Gasoil – Used for plant/machinery
- Burning Oil – Used for heating at Bridge Nurseries
- Diesel (ULSD) – Used in plant/machinery and the company HGV
- Forecourt Diesel – Used in fleet vehicles
- Unleaded – Used in fleet vehicles and site construction/maintenance tools
- Natural Gas – Used for heating at 55 Maltings office

## **ANALYSIS**

### **Overall**

From the data highlighted above, the largest source of Willerby Landscapes carbon emissions in 2021 was Diesel, contributing approximately 82% of the overall tCO<sub>2</sub>e produced; of the Diesel used, ULSD, used primarily as fuel for plant/machinery, contributed to 46% of the overall tCO<sub>2</sub>e produced.

These figures are not unexpected as most fleet vehicles and plant/machinery run on diesel and these vehicles are in use every day. The figures highlight an alternative, sustainable source of fuel to replace diesel and replacing vehicles with more energy efficient alternatives will significantly reduce the carbon emissions produced by Willerby Landscapes; these are the opportunities that Willerby Landscapes will focus on in order to achieve the 2030 target.

In comparison to 2020 figures for overall Diesel emissions, forecourt diesel usage has reduced by approximately 28% (~35tCO<sub>2</sub>e) and ULSD has an increased usage of approximately 18% (~17tCO<sub>2</sub>e). The change in diesel usage likely stems from operatives returning to using public transport, rather than using fleet vehicles, following the change in COVID-19 restrictions that were in place in 2020 and early 2021. The increase in ULSD is likely to have resulted from a similar source, where more sites are open in comparison to 2020, thereby allowing more plant and machinery to operate, as well as more movement from company-owned vehicles that would source ULSD diesel from Bridge Nurseries.

Gasoil, Burning Oil and Unleaded fuel all had reduced figures in 2021 compared to 2020 figures, however the size of reduction is considered minimal for each and there isn't an obvious reason for the reduction for each fuel source.

Natural Gas was used for heating at 55 Maltings, however the premises was rarely used in 2021 and therefore no Natural Gas was used throughout the year. From the end of 2021, Willerby Landscapes no longer use 55 Maltings, therefore figures for Natural Gas will remain at 0 (zero) from this report onwards, with reference to 55 Maltings being removed in subsequent reports.

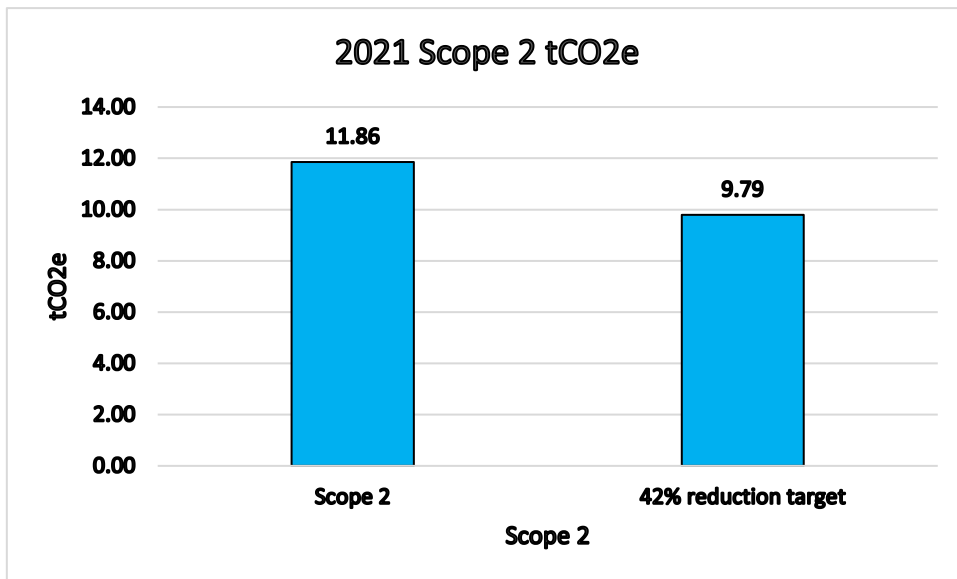
Following a request from a specific site in 2021, HVO Biodiesel was used. This is likely to be the primary replacement fuel for ULSD, however, when this gets implemented is dependent upon availability, viability, and cost. The use of HVO Biodiesel will be elaborated upon in later reports, when more information is gathered.

**SCOPE 2**

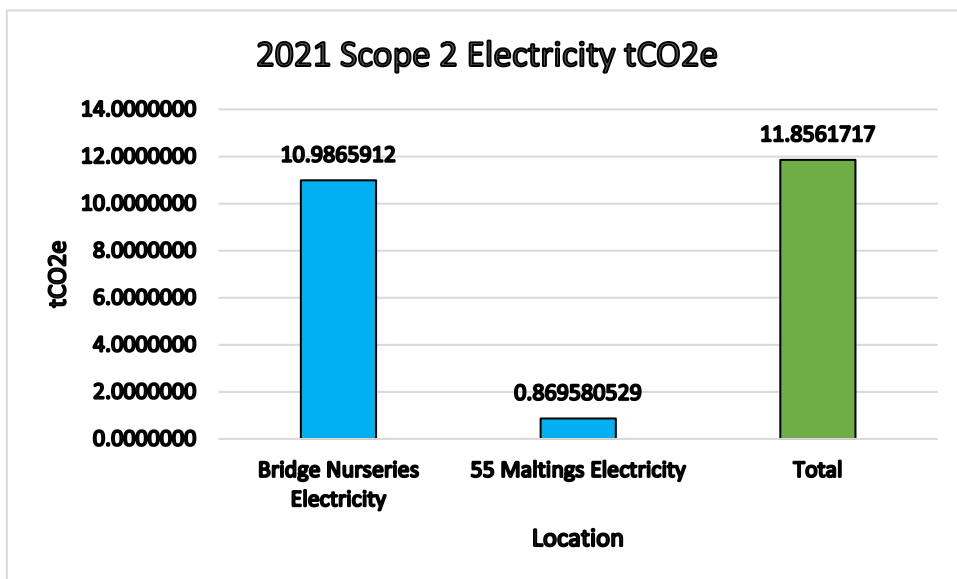
**RESULTS**

SCOPE 2				
	kWh	kgCO2e conversion factor	kgCO2e	tCO2e
Bridge Nurseries Electricity	68470	0.23314	15963	15.9630958
55 Maltings Electricity	3898	0.23314	909	0.908884633

Table #3: Table showing Scope 2 data for 2021



Graph #5: Bar Chart showing overall Scope 2 data for 2021



Graph #6: Bar Chart showing Scope 2 data at individual locations for 2021

The above table and graphs highlight the overall Scope 2 emissions and emission contributors for Willerby Landscapes in 2021. Please note the below

- Bridge Nurseries is the company head office and is in Kent, England.
- 55 Maltings is a secondary office located in London, England.

The Scope 2 fuels highlighted above are used in the following processes:

- Bridge Nurseries electricity – used for power to the main office building and the barn
- 55 Maltings electricity – used for power to the office.

## **ANALYSIS**

### **Overall**

From the data highlighted above, the major contributor is the electricity used in operations at Bridge Nurseries. This is unsurprising as the majority of the operations occurs at this location. This will be the site that the reduction methods are focussed on.

As stated in the Scope 1 section, 55 Maltings was rarely used in 2021 and the electricity consumption recorded in this report, is likely to be from indirect elements that Willerby Landscapes have no direct influence over. From the end of 2021, 55 Maltings will not be used by Willerby Landscapes, therefore the electricity figures will be 0 (zero). The reference to 55 Maltings will be removed in subsequent reports.

### **SCOPE 3**

Due to this report being written retrospectively, information pertinent to calculating Scope 3 emission figures is unavailable and therefore no figure is available.

The figures that will be reported on in later reports are as follows:

- Sub-contractor emissions (overall emission totals)
- Transmission & Distribution
- Water Supply
- Water Treatment
- Material Use
- Waste Disposal
- Business Travel – Air
- Business Travel – Sea
- Business Travel – Land
- Freighting Goods
- Managed Assets – Vehicles
- Hotel Stays
- WTT – Fuels
- WTT – Bioenergy
- WTT – UK Electricity (T&D)
- WTT – UK Electricity (Generation)
- WTT – Air
- WTT – Sea
- WTT – Land
- WTT – Freighting Goods
- Managed Assets – Electricity
- Homeworking

## **OUTSIDE OF SCOPES**

Due to this report being written retrospectively, information pertinent to calculating Outside of Scopes emission figures is unavailable and therefore no figure is available.

The figures that will be reported on in later reports are as follows:

- Forecourt Fuels containing biofuel
- Biofuel
- Biomass
- Biogas
- Electricity generated

## **CONCLUSION**

In conclusion, this report highlights the key areas that Willerby Landscapes will be focussing on in order to achieve the reduction target. While this report does not specify reduction methodologies, the foundation has been set in order to report and effectively managing the reduction process in subsequent years.

Further reporting information for Scope 3 and Outside of Scopes emissions are expected in subsequent years, as well as reduction methods and respective effectiveness.

**END**

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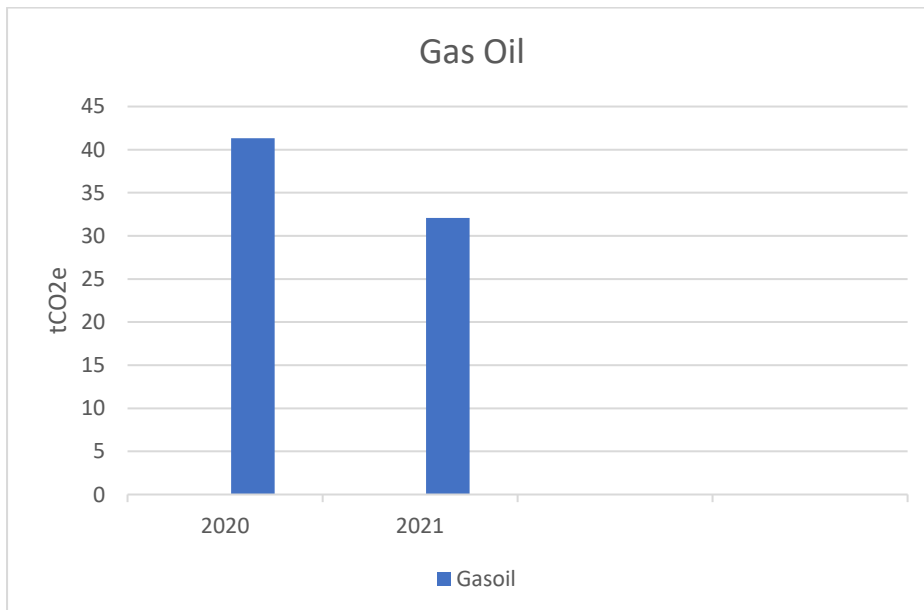
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**APPENDIX A – Yearly Comparison Graphs for individual fuels (Scope 1)**

	2020	2021
Fuel type	tCO2e	tCO2e
Gasoil	41.30986592	32.09044481
Burning Oil	13.37261296	8.38754228
DERV	167.5949453	87.15006463
Diesel (ULSD)	48.56806828	110.5550817
Unleaded	5.201838787	2.097027055
Natural Gas (m3)	1.52306298	0
HVO Biodiesel	0	0.03212874
Electricity (kWh)	16.87187552	11.85608254
<b>Total</b>	<b>294.4422698</b>	<b>252.1683717</b>

Table #5: Table comparing emissions from individual fuel and energy sources between 2020 and 2021.

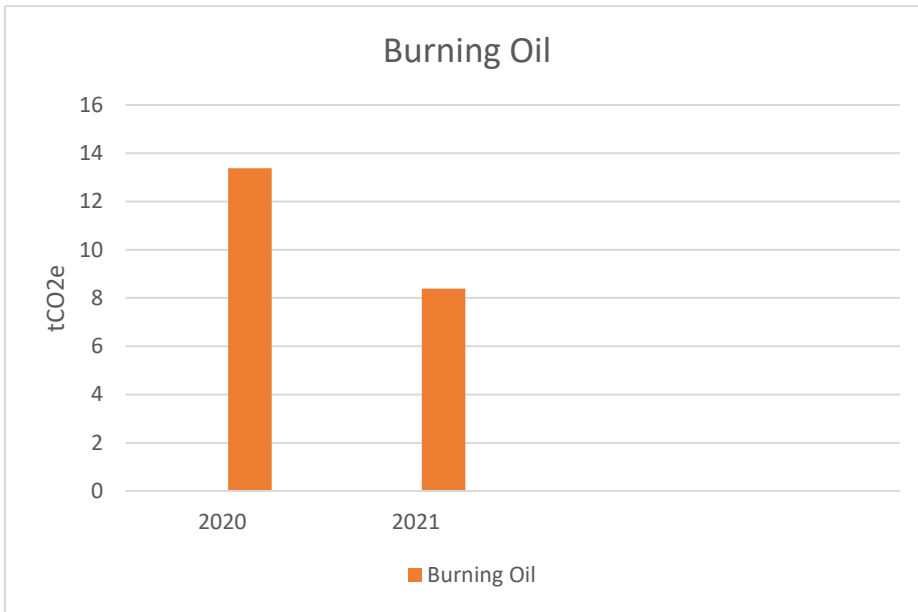
**Gas Oil**



Graph #7: Yearly comparison of Gas Oil between 2020 and 2021

Approximate 9t reduction in tCO2e between 2020 and 2021

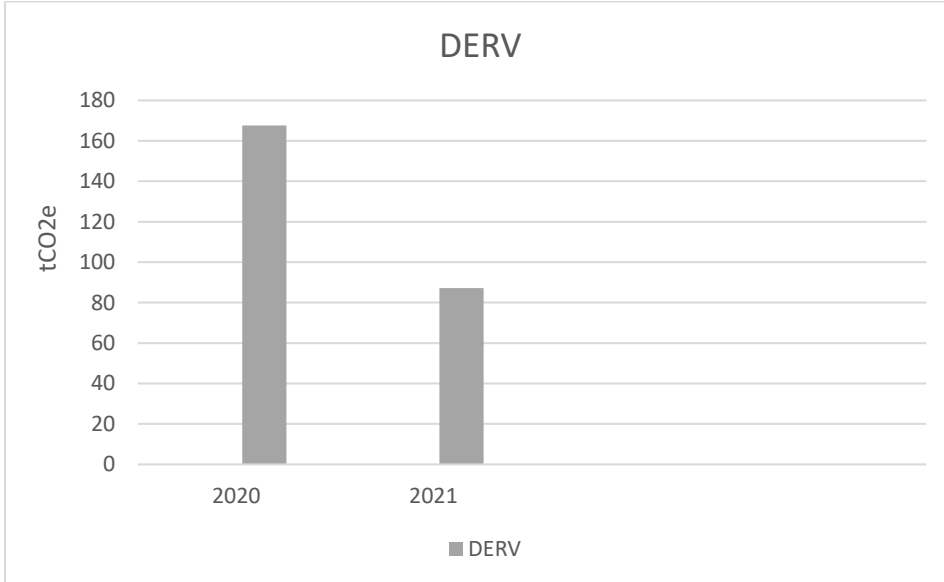
**Burning Oil**



Graph #8: Yearly comparison of Burning Oil between 2020 and 2021

Approximate 5t reduction in tCO2e between 2020 and 2021

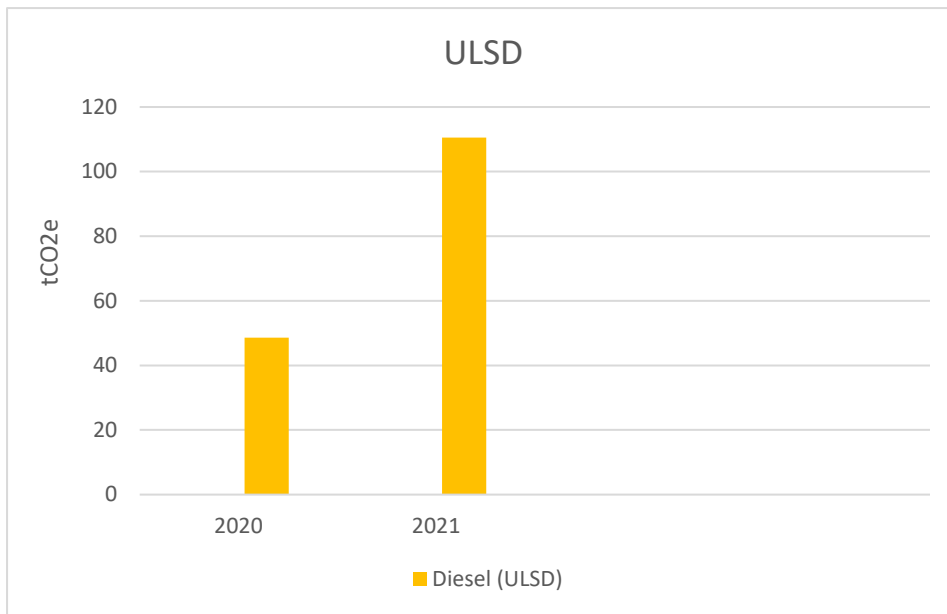
**DERV**



Graph #9: Yearly comparison of DERV between 2020 and 2021

Approximate 80t reduction in tCO2e between 2020 and 2021

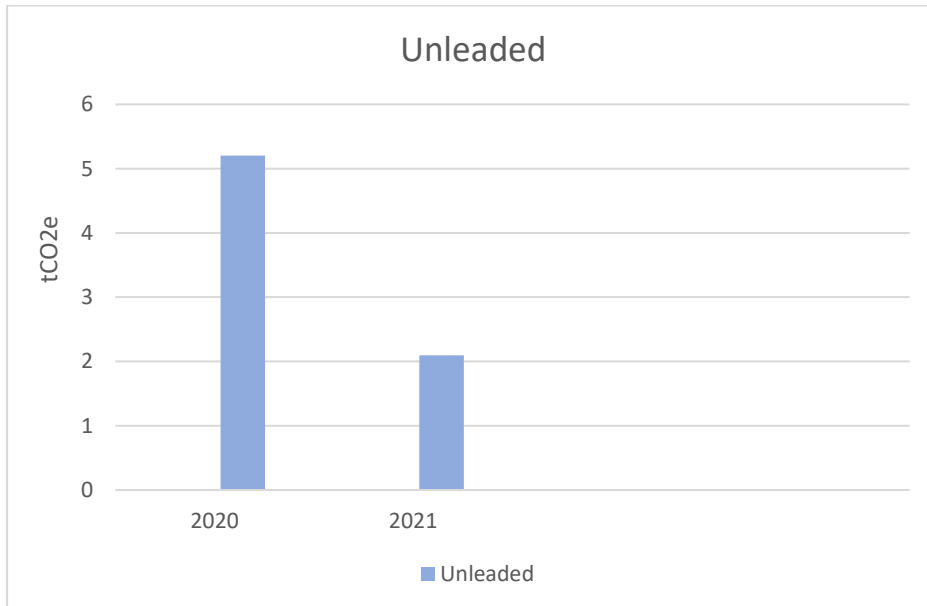
**Diesel (ULSD)**



Graph #10: Yearly comparison of Diesel (ULSD) between 2020 and 2021

Approximate 63t increase in tCO2e between 2020 and 2021

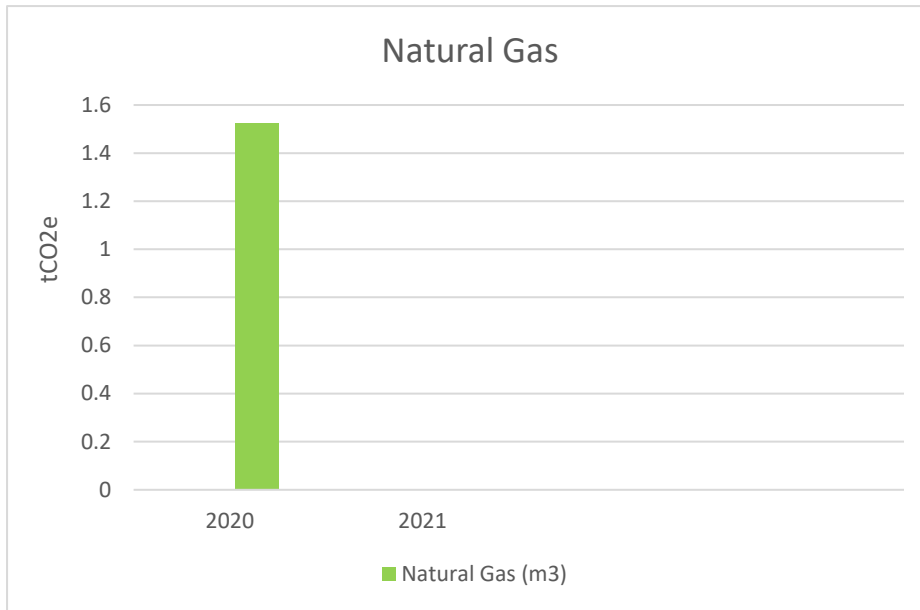
**Unleaded**



Graph #11: Yearly comparison of Unleaded between 2020 and 2021

Approximate 3t reduction in tCO2e between 2020 and 2021

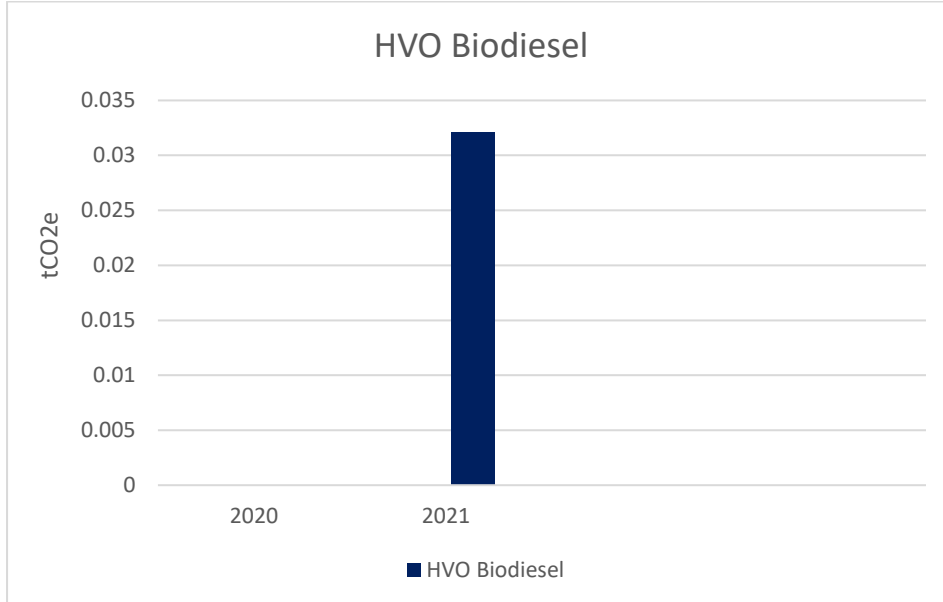
## Natural Gas



Graph #12: Yearly comparison of Natural Gas between 2020 and 2021

Total reduction in tCO<sub>2</sub>e between 2020 and 2021

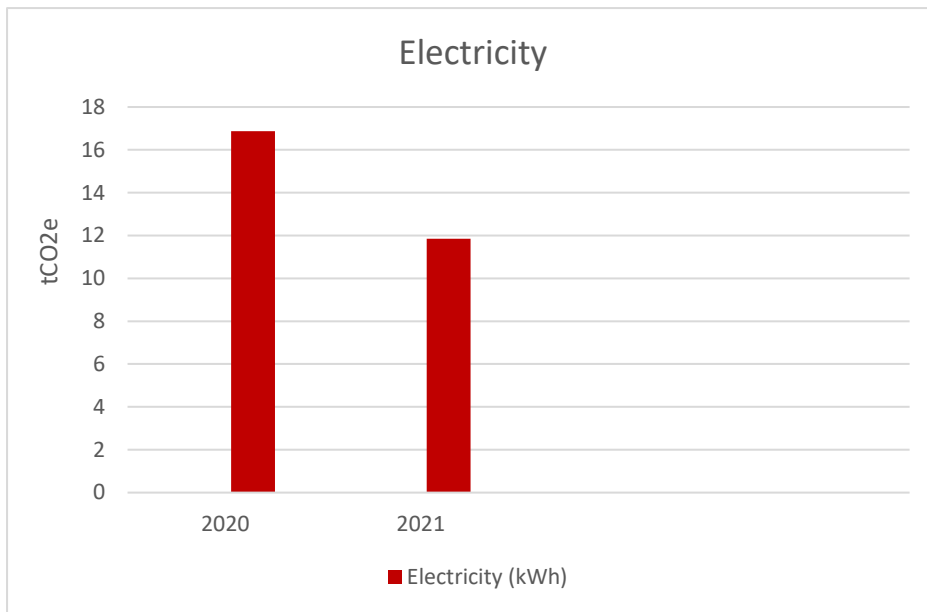
## HVO Biodiesel



Graph #13: Yearly comparison of HVO Biodiesel between 2020 and 2021

Approximate 0.03 increase in tCO<sub>2</sub>e between 2020 and 2021

**APPENDIX B – Yearly Comparison Graphs for individual fuels (Scope 2)**



Graph #14: Yearly comparison of Electricity between 2020 and 2021

Approximate 5t reduction in tCO2e between 2020 and 2021