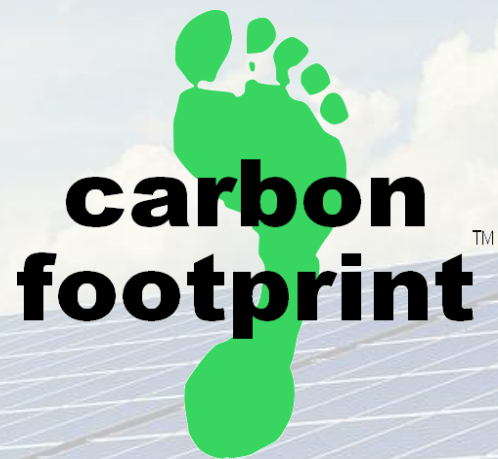




Carbon Footprint Appraisal
for
OrangeTek Limited

01/01/2025 – 31/12/2025

Executive Summary

Current Performance

- OrangeTek's total market-based emissions are 109.41 tCO₂e (with a location-based emissions of 101.05 tCO₂e).
- The most significant market-based emission source is Upstream air freight, accounting for 36% of the business's carbon footprint.
- OrangeTek's total market-based emissions have reduced 88.3% relative to the baseline year.
- Currently your progress towards Net Zero cannot be ascertained as the business does not have validated Net Zero targets set/implementation plan in place.

Strategic Recommendations

- Complete Net Zero target setting and associated implementation plan (this should include supply chains).
- Publish your results on The Carbon Data Intelligence (CaDI) www.carbondi.com to prove your commitment to transparency.
- Compensate carbon emissions you have caused via high integrity removals/reductions projects – please see www.carbonfootprint.store

Recommendations to Reduce Emissions

- Reduce reliance on air freight where operationally viable, particularly for transporting larger masses; previously you have used rail freight from China, thereby greatly reducing freight emissions.
- Liaise with the landlord to investigate whether moving your sites to a renewable tariff is possible.

Emissions Totals

Scope	Emission Source	Location-Based (tCO ₂ e)	Market-Based (tCO ₂ e)
2	Consumption of purchased electricity, heat steam and cooling	5.08	13.43
Scope 2 Total		5.08	13.43
3	3.1 Purchased goods and services	0.03	0.03
	3.3 Fuel and energy related activities (not included in scope 1 or scope 2)	1.96	1.96
	3.4 Upstream transportation and distribution	78.20	78.20
	3.5 Waste generated in operation	0.01	0.01
	3.6 Business travel (not included in scope 1 or scope 2)	5.74	5.74
	3.7 Employee commuting	10.04	10.04
Scope 3 Total		95.98	95.98
Total (Scope 1, 2 and 3)		101.06	109.41

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Quality Control

Report issue number: 1.0
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Calculations reviewed by: Aaron Aaltonen

Report produced by: Adam Bond
Report reviewed by: Aaron Aaltonen

Director approval: Dr. Wendy Buckley

1 Introduction

1.1 Company Overview

OrangeTek is a supplier of exterior LED lighting products, specialising in energy-efficient street lanterns and smart-city-ready luminaires, operating from a UK office and warehouse.

1.2 Data supplied for the Carbon Footprint Appraisal

A summary of the data supplied by OrangeTek for the appraisal can be provided on request.

1.3 Methodology for the Carbon Footprint Appraisal

The methodology document can be downloaded using this link,

[https://www.carbonfootprint.com/docs/carbon footprint appraisal - methodology document.pdf](https://www.carbonfootprint.com/docs/carbon_footprint_appraisal_methodology_document.pdf)

1.4 Abbreviations

AC	Air Conditioning
AIB	Association of Issuing Bodies
CaDI	Carbon Data Intelligence
CO ₂ e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
GHG	Greenhouse Gas
HGV	Heavy Goods Vehicle
ISO	International Standards Organisation
IWA	International Workshop Agreement
km	Kilometres
kWh	Kilowatt Hours
T&D	Transmission & Distribution
TTW	Tank-To-Wheel
WTT	Well-To-Tank
WTW	Well-To-Wheel

2 Calculation Scope and Accuracy

2.1 Scope of this work

Carbon Footprint has assessed the GHG emissions from 01/01/2025 to 31/12/2025 resulting from the OrangeTek Limited's United Kingdom operations.

OrangeTek's baseline year data and emissions can be found in the 2017/18 report.

2.2 Organisational & reporting boundaries

Figure 1 shows the full boundaries of the *Greenhouse Gas Protocol Corporate and Value Chain Standards*. The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has operational control. This assessment covers the reporting boundaries shown in Table 1, in line with the GHG Protocol.

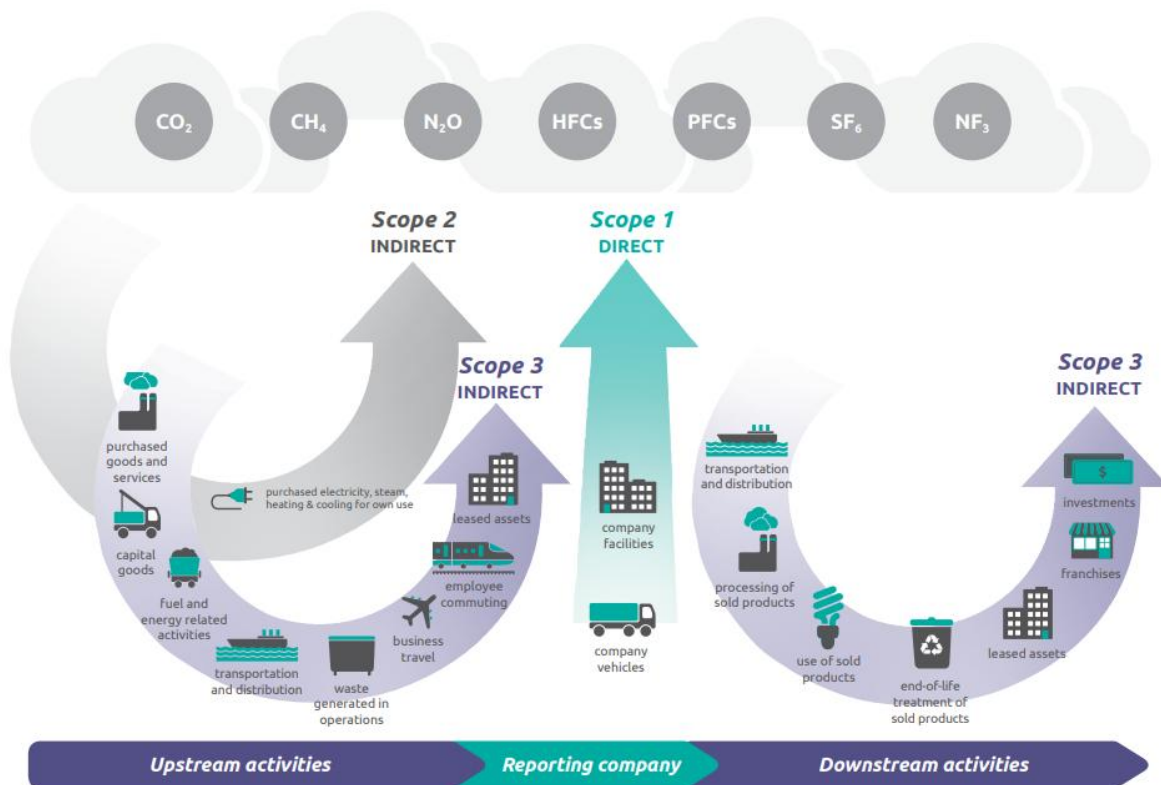


Figure 1: Overview of emissions scopes (GHG Protocol - Scope 3 Calculation Guidance v1.0 - 2013)

Table 1: OrangeTek Limited's GHG Assessment boundary based on the Greenhouse Gas Protocol Accounting and Reporting Corporate Standard
(All green rows have been included in this assessment; all grey rows are not applicable; orange rows partially assessed; red rows have been excluded)

Scope	Title	Completion Status	Justification
1	Electricity, heat or steam generated on-site	Not relevant	
	Fuel Use	Not relevant	
	Company owned vehicles	Not relevant	
	Fugitive emissions (incl. Refrigerant gases and AC)	Complete	No top ups due to leakage.
2	Consumption of purchased electricity, heat steam and cooling	Complete	
3	3.1 Purchased goods and services	Partial	Paper included.
	3.2 Capital goods	Excluded	Relevant and recommended to include in future assessments.
	3.3 Fuel and energy related activities (not included in scope 1 or scope 2)	Complete	
	3.4 Upstream transportation and distribution	Complete	
	3.5 Waste generated in operation	Partial	Wastewater not included.
	3.6 Business travel (not included in scope 1 or scope 2)	Complete	
	3.7 Employee commuting	Complete	
	3.8 Upstream leased assets	Not relevant	
	3.9 Downstream transportation and distribution	Not relevant	
	3.10 Processing of sold products	Not relevant	
	3.11 Use of sold products	Excluded	Relevant and recommended to include in future assessments.
	3.12 End-of-life treatment of sold products	Excluded	Relevant and recommended to include in future assessments.
	3.13 Downstream leased assets	Not relevant	
	3.14 Franchises	Not relevant	
	3.15 Investment	Not relevant	

2.3 Calculation uncertainty assessment & materiality

The result of a carbon footprint calculation varies in accuracy depending on the data set provided. The more accurate the data supplied, the more accurate the final result. Materiality is determined by the percentage contribution of each element to the overall footprint.

Based on the accuracy of the data provided (Table 2), a simple uncertainty analysis has been used to estimate the potential error margin for the appraisal results.

Table 2: Assessment accuracy, materiality and simple error analysis

Data	Source of data	Materiality	Uncertainty	Error Margin (tCO ₂ e)
Freighting	Logistics provider details provided for all elements of freight, with mass transported, freight type and mileage per trip. Sea freight data includes the Container Ship name, which allowed for Ship Capacity to be deduced, thus increasing the accuracy of this element. TPN road freight assumed to be in 3.5 - 7.5 tonne rigid HGVS which is deemed appropriate for the general transported mass. Otherwise, average HGV and Van factors have been used.	Very High (>40%)	1%	0.78
Electricity	Total quarterly consumption provided by the landlord for both the office and warehouse. Scottish Power provide the electricity; actual tariff has not been provided so "All Other Tariffs" emissions factor has been used in the market-based total.	Medium (5-20%)	5%	0.77
Commuting	Annual mileage, fuel type, and car size classification has been provided per commuting employee, with post codes and days commuting per week as evidence for data. All commuting employees answered the survey; no extrapolation required.	Medium (5-20%)	5%	0.50
Home Workers	Multiple occupancy assumed for all homeworkers. Days per week and weeks per year worked included per employee. All homeworkers answered the survey; no extrapolation required.	Very Low (<1%)	50%	0.06
Cars	Data included exact vehicle details and annual distance (miles) obtained from internal expense report.	Low (1-5%)	1%	0.05
Flights	One flight with class and distance in miles provided.	Very Low (<1%)	1%	<0.01
Public Transport	Distance per trip for all expensed ferry and rail mileage included.	Very Low (<1%)	1%	<0.01
Paper	Total number of sheets purchased, with size and GSM included.	Very Low (<1%)	1%	<0.01
Waste	Data includes waste type, disposal route and quantity of waste (kg). Total kg of recycled waste has been split assuming 1/5 is plastic and 4/5 is paper and board.	Very Low (<1%)	5%	<0.01
Total Emissions			+/- 1.97%	+/- 2.16



3 Carbon Footprint Results

3.1 Summary of results

The total location-based carbon footprint for OrangeTek Limited for the period ending 31/12/2025 is 101.06 tonnes CO₂e, and the market-based total is 109.41 tonnes CO₂e.

Table 3: Results of OrangeTek Limited's carbon footprint assessment by scope and GHG Protocol emission categories

Scope	Emission Source	Location-Based (tCO ₂ e)	Market-Based (tCO ₂ e)
2	Consumption of purchased electricity, heat steam and cooling	5.08	13.43
Scope 2 Total		5.08	13.43
3.1	Paper	0.03	0.03
3.3	Scopes 1 and 2 WTT	1.32	1.32
	Transmission & Distribution	0.65	0.65
3.4	Upstream air freight	45.00	45.00
	Upstream HGV freight	19.15	19.15
	Upstream sea freight	13.35	13.35
	Upstream van freight	0.70	0.70
3.5	Waste generated in operation	0.01	0.01
3.6	Grey Fleet	5.09	5.09
	Flights	0.47	0.47
	Ferry	0.13	0.13
	Rail	0.05	0.05
3.7	Commuting	9.92	9.92
	Homeworking	0.12	0.12
Scope 3 Total		95.98	95.98
Total (Scope 1, 2 and 3)		101.06	109.41
Tonnes of CO₂e per employee		10.10	10.94
Tonnes of CO₂e per £ million turnover		66.48	71.98
Kilograms of CO₂e per unit product output		8.16	8.83



4 Comparison, Publication, and Benchmarking

4.1 Comparison to base year emissions

The table below shows historical emissions per activity, as well as the total carbon footprint and carbon intensity metrics (tonnes of CO₂e per employee, per unit output, and per £M turnover¹).

Table 4: OrangeTek Limited's carbon footprint comparison and percentage change

Element	2017	2024	2025	% change on baseline year (2017)	% change on previous year
Outsourced Logistics - Air	678.44	15.88	39.12	-94.2% ▼	146.4% ▲
Well To Tank (Market-Based)	84.07	14.73	16.76	-80.1% ▼	13.8% ▲
Outsourced Logistics – Road (HGV)	10.04	5.14	15.53	54.7% ▲	202.2% ▲
Site electricity (Market-based)**	11.35	12.35	13.96	23.0% ▲	13.1% ▲
Outsourced Logistics - Sea	61.41	24.28	10.88	-82.3% ▼	-55.2% ▼
Commuting	-*	11.21	7.82	n/a	-30.3% ▼
Employee-owned car travel (grey fleet) (Location-based)	17.90	4.33	4.06	-77.3% ▼	-6.1% ▼
Van travel and distribution (Outsourced)	18.81	0.00	0.56	-97.0% ▼	n/a
Flights	24.53	1.50	0.40	-98.4% ▼	-73.3% ▼
Home-working	-*	1.28	0.12	n/a	-90.6% ▼
Ferry travel	0.41	0.09	0.10	-75.1% ▼	18.1% ▲
Rail travel	0.01	0.29	0.04	205.4% ▲	-86.4% ▼
Paper	-*	0.03	0.03	n/a	9.0% ▲
Waste	-*	0.02	0.01	n/a	-40.6% ▼
Taxi travel	0.16	0.05	0.00	-100% ▼	-100% ▼
Outsourced Logistics - Rail	24.45	1.34	0.00	-100% ▼	-100% ▼
Hotel stays	-*	0.61	0.00	n/a	-100% ▼
Total Tonnes of CO₂e (Market-based)	931.59	93.11	109.41	-88.3% ▼	17.5% ▲
Tonnes of CO₂e per employee	65.19	9.31	10.94	-83.2% ▼	17.5% ▲
Tonnes of CO₂e per M turnover	696.76	43.63	71.98	-89.7% ▼	65.0% ▲
Kilograms of CO₂e per unit output	21.19	6.14	8.83	-58.3% ▼	43.8% ▲

**Not originally assessed in baseline period*

***Back calculated using the residual grid mix factor for each assessment period, in lieu of any tariff specific emission factors*

OrangeTek also assessed its emissions in 2022 and 2023; please find a breakdown of these emissions in previous reports.

Please see Figure 4 below for a year on year comparison of OrangeTek's emission intensity metrics.

¹ Adjusted for inflation.

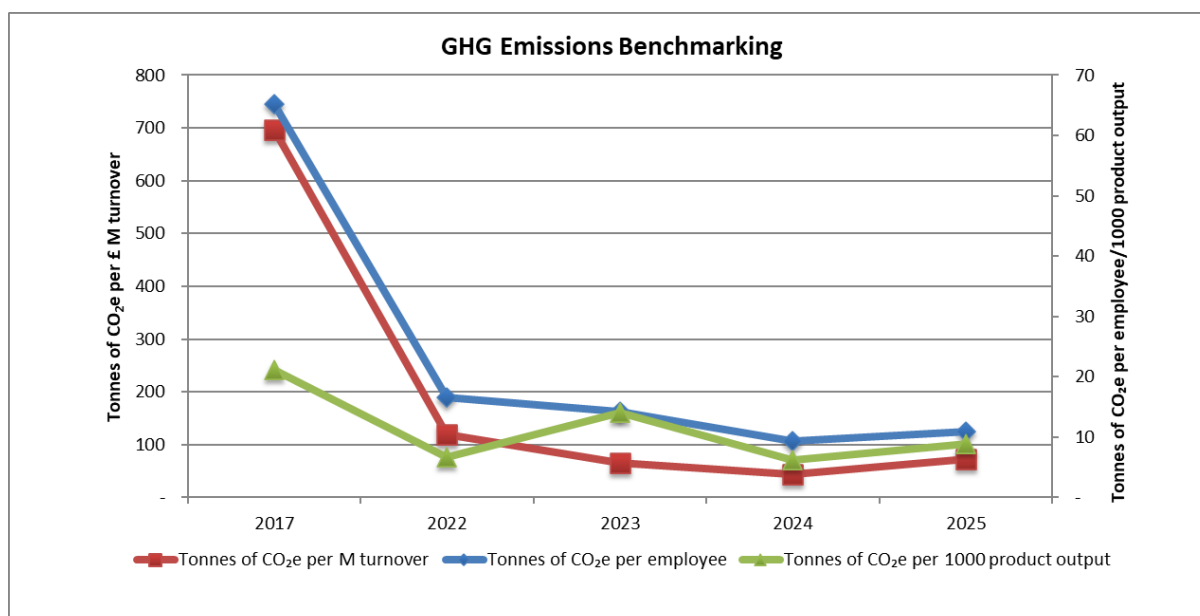


Figure 2: Detailed emissions comparison for the various aspects of OrangeTek Limited's emissions

4.2 Key observations for benchmarking

When comparing the results of the current assessment to the previous assessment year, the following is observed:

- OrangeTek's emissions have reduced drastically when compared to the baseline assessment year; this is due to a 94% decrease in air freight emissions.
- Compared to the previous assessment, OrangeTek's emissions have risen when using all intensity metrics, and gross emissions. This is due to an increase in air freighting.
- Site market-based electricity emissions have been benchmarked using the residual grid mix factors available via AIB² and CaDI³.
- If all air freight weighing over 50kg were to shift to sea freight, the associated emissions would drop from 42.2 tCO₂e to 0.6 tCO₂e. This estimation has assumed the same distance for the freighting which is inaccurate as sea freight distance routing is greater than air freight; this calculation is left here to give an idea of the order of magnitude of emissions savings possible with this transition.

² <https://www.aib-net.org/facts/european-residual-mix/2017>

³ <https://www.carbondi.com/#electricity-factors/view-country-details/64b94672eea56b0028fe36ae/>

4.3 External Publication and Benchmarking of Your Carbon Footprint

We strongly encourage you now to **publish your carbon footprint results on Carbon Data Intelligence (CaDI)** – our new global platform. Follow [this link](https://carbondi.com/) to grant us permission to publish your results automatically.



<https://carbondi.com/>

External publication demonstrates your commitment to carbon management and to responsible transparency. Your results will also be endorsed on CaDI as ‘Verified’ for additional peace of mind for you and viewers of the data.

Using CaDI, you can also search other organisations that have reported their emissions to benchmark your performance.

Many companies report Scope 1 & 2 emissions for comparison against others as elements included in Scope 3 can vary greatly. Table 5 summarises the emissions across these Scopes, along with metrics showing emissions per unit turnover and per employee, to help your benchmarking.

Table 5: OrangeTek's benchmarked emissions

Year/Element	Location based	Market based
Total number of employees	10	
Turnover in £ million	1.52	
Product Output	12,388	
Tonnes of CO₂e	101.05	109.41
Tonnes of CO₂e per employee	10.10	10.94
Tonnes of CO₂e per £ million turnover	66.48	71.98
Kilograms of CO₂e per unit output	8.16	8.83
Scope 1 & 2 Emissions		
Tonnes of CO₂e	5.08	13.43
Tonnes of CO₂e per employee	0.51	1.34
Tonnes of CO₂e per £ million turnover	3.34	8.84
Kilograms of CO₂e per unit output	0.41	1.08

5 Recommendations

5.1 Carbon & sustainability targets

5.1.1 Expand the Scope of the Assessment

In preliminary calls and the returned data capture pack for this project, OrangeTek has highlighted that it only wishes to assess its operational emissions with Carbon Footprint Ltd moving forwards.

We however recommend that the scope of the assessment is expanded in future to include the aspects that are identified as excluded in Table 1. Broadening the boundary provides a more complete picture of OrangeTek's overall impact, particularly as the majority of emissions for organisations that purchase and distribute physical products typically sit upstream rather than within day-to-day operations. Including these categories strengthens the robustness of the assessment, supports long-term planning, and ensures that future reporting aligns with emerging expectations across the market, even in the absence of formal compliance requirements. It also enables OrangeTek to respond more effectively to customer enquiries, demonstrate transparency, and identify opportunities for efficiency or supplier engagement that would not be visible through operational emissions alone.

The most material element would likely be Purchased Goods & Services, so we recommend you focus on capturing data for this for the next assessment period.

5.1.2 Target setting for net zero

Company should set targets based on per employee and/or per £M turnover, which will account for business growth. Many organisations are now setting targets based on typical mid-term and longer terms goals to reach net zero (ISO's International Workshop Agreement on Net Zero Guidance - IWA 42:2022⁴):

- A 50% reduction in emissions per £M turnover/employee by 2030.
- A 90% reduction in emissions per £M turnover/employee by 2045.

All targets set should be reviewed regularly and amended accordingly (i.e. target increased if it is met ahead of schedule). A clear roadmap for individual emissions sources should be in place. This will ensure the strategy for reducing CO₂e emissions and tracking toward a net zero target is appropriate for the business.

A hyperlink to Carbon Footprint Ltd's whitepaper on target setting can be found below:

https://www.carbonfootprint.com/docs/2021_12_cfp_practical_target_setting_-_white_paper_v10.pdf

⁴ [ISO - Net Zero Guidelines](#)

5.2 Reducing emissions

To reduce GHG emissions, we recommend the following:

- Shift air freight to sea or rail freight, where operationally possible. Section 4.2. highlights the scale of emissions savings possible with this implementation.
- Currently the only information provided regarding onsite electricity consumption is total kWh consumed and that Scottish Power supplies the buildings. Moving forwards, liaise with the landlord to get more information about which tariff OrangeTek is currently on, and whether it will be possible to switch to a renewable tariff moving forwards. Typically, costs for a renewable electricity tariff are comparable to standard electricity tariffs.

5.3 Taking Responsibility for your Emissions

Carbon reduction & removal projects provide a practical solution for compensating for emissions that cannot be reduced by supporting projects that achieve an equivalent reduction in carbon dioxide elsewhere.

Global net-zero 2050 targets cannot be met solely through current reduction commitments. This is why the Voluntary Carbon Market exists and the reason why your support of carbon compensation projects is vital to bridge the gap.

Projects are categorised as either 'reductions' or 'removals':

- **Reductions:** These projects aim to reduce emissions by preventing them from occurring in the first place. Examples include renewable energy projects and energy efficiency improvements.
- **Removals:** These projects focus on removing existing carbon dioxide from the atmosphere. Examples include afforestation, reforestation, and carbon capture and storage.

In addition, many projects place a strong emphasis on both social and environmental benefits (satisfying UN Sustainable Development Goals). It's essential to note that global net-zero targets cannot be met solely through emission reductions. Support from the voluntary carbon market through carbon compensation credits plays a crucial role in reaching these targets.

All Carbon Footprint's projects score highly across the key criteria of additionality, permanence, measurability, and leakage. Increasing numbers of projects are also gaining ICVCM CCP status, reflecting their high integrity.

You can view and compare the ratings of ca 2,000 projects on CRISP – [CRISP – Carbon Ratings InSight Platform](#).

You can purchase your required carbon compensation credits by selecting from a range of high-quality verified projects on the [Carbon Marketplace \(COMP\)](#).

Filters & Sort

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All Types

Location

All Locations

Vintage Year

All Vintages

ICVCM CCP

All

Min Rating: 0/5

UN Sustainable Development Goals

Carbon Projects

Purchase from specific projects or create your own portfolio • 62 projects available



Clean Drinking Water

GOLD STANDARD

Zambia Western Province Safe Water Project

Project #: GS11010

Vintages: 2023, 2024

CRISP Rating: 4.4 out of 5.0

[View on CRISP](#)

£8.25 ex VAT **per tonne**

Tonnes to purchase (min 10, max 5,000):

- 0 +



Wind Power

VERIFIED CARBON STANDARD

Bundled Wind Power Project by Sembcorp Green Infra Limited in India

Project #: VCS1856

Vintages: 2024, 2025

CRISP Rating: 3.8 out of 5.0

[View on CRISP](#)

£5.65 ex VAT **per tonne**

Tonnes to purchase (min 10, max 5,000):

- 0 +



Land Fill Gas

VERIFIED CARBON STANDARD

Huizhou Landfill Gas Power Generation Phase III and IV Project

Project #: VCS3348

Vintages: 2021, 2022

CRISP Rating: 5.0 out of 5.0

[View on CRISP](#)

£5.65 ex VAT **per tonne**

Tonnes to purchase (min 10, max 5,000):

- 0 +



Grassland Restoration

VERIFIED CARBON STANDARD

Soil Carbon Improvement Project through Grassland Management, in South Africa

Project #: VCS2710

Vintages: 2022

CRISP Rating: 4.2 out of 5.0

[View on CRISP](#)

£16.00 ex VAT **per tonne**

Tonnes to purchase (min 10, max 5,000):

- 0 +

6 Conclusions

OrangeTek Limited, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint and has achieved reductions in gross market-based emissions and all emissions intensity metrics, when compared to its baseline assessment.



By assessing this data period, OrangeTek Limited has qualified to use the Carbon Footprint Standard branding. This can be used on all marketing materials, including website and customer tender documents, to demonstrate your carbon management achievements.

Annex A – Emissions per GHG Category

A full breakdown of OrangeTek Limited's emission sources is given below. This aligns with the GHG Protocol classification methodology and provides each associated emissions source.

Scope	GHG Protocol Emission Category	Emission Source	Location-Based (tCO ₂ e)	Market-Based (tCO ₂ e)
1	Fugitive emissions (incl. Refrigerant gases and AC)	Refrigerants	0.00	0.00
Scope 1 Total			0.00	0.00
2	On-site Consumption of purchased electricity, heat steam and cooling	Electricity	5.08	13.43
Scope 2 Total			5.08	13.43
3.1	1. Purchased goods and services	Paper	0.03	0.03
3.3	3. Fuel- and energy related activities (not included in scope 1 or scope 2)	Scopes 1 and 2 WTT	1.32	1.32
		Transmission & Distribution	0.65	0.65
3.4	4. Upstream transportation and distribution	Upstream air freight	45.00	45.00
		Upstream HGV freight	19.15	19.15
		Upstream sea freight	13.35	13.35
		Upstream van freight	0.70	0.70
3.5	5. Waste generated in operation	Waste	0.01	0.01
3.6	6. Business travel (not included in scope 1 or scope 2)	Grey Fleet	5.09	5.09
		Flights	0.47	0.47
		Ferry	0.13	0.13
		Rail	0.05	0.05
3.7	7. Employee commuting	Commuting	9.92	9.92
		Homeworking	0.12	0.12
Scope 3 Total			95.98	95.98
All	Tonnes of CO ₂ e		101.06	109.41
	Tonnes of CO ₂ e per employee		10.10	10.94
	Tonnes of CO ₂ e per £ million turnover		66.48	71.98