

2D Building Contractors Ltd

Carbon (GHG) Emissions Report

2023/24



Completed by Carbon Neutral Britain Ltd

November 2024

Project No: 4322



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1 - Message from Carbon Neutral Britain™

It has never been more important for businesses to step up and take account of the environmental impact associated with their operations.

"We are delighted to continue our partnership with 2D Building Contractors Ltd to help identify and offset their environmental impact for 2023 and beyond."

James Poynter
Director - Carbon Neutral Britain

In the UK, businesses account for over 85% of total GHG emissions - making corporate action the number one priority in helping stop climate change.

Looking to do their part for the environment, 2D Building Contractors Ltd engaged with Carbon Neutral Britain in October 2024, with the ambition to measure and offset the total organisation emissions - to continue their Carbon Neutral status.

As building contractors, it was identified that the main emissions were to occur from company owned/leased vehicles and the mileage completed within the reporting period.

2 - Carbon Emissions Summary

Organisation	2D Building Contractors Ltd
Reporting Period	1st November 2023 - 31st October 2024
Consolidation Approach	Operational Control
Base Year	2021/22 - 136.01 Tonnes of Carbon Dioxide Equivalent
Second Year	2022/23 - 145.43 Tonnes of Carbon Dioxide Equivalent
Current Total Emissions	2023/24 - 159.17 Tonnes of Carbon Dioxide Equivalent

2.1 Emissions Table

Scope 1:

Stationary or Mobile Combustion Source	2,511.92	kg CO2e
Mains Gas	-	kg CO2e
Company Owned/Leased Vehicles	114,832.21	kg CO2e
Refrigerant Gas Loss Recharge	-	kg CO2e
Total	117,344.13	kg CO2e
Total (Tonnes)	117.34	t CO2e

Scope 2:

Total Organisation Energy Usage on Site	2,936.18	kg CO2e
Total Electric Vehicle Energy Usage	-	kg CO2e
Total	2,936.18	kg CO2e
Total (Tonnes)	2.94	t CO2e

Scope 3:

Total Organisation Energy Usage WFH	-	kg CO2e
Organisation Waste	510.35	kg CO2e
Business Travel (not using owned/leased Vehicles)	3,667.55	kg CO2e
Staff Commuting (not using owned/leased Vehicles)	1,648.44	kg CO2e
Business Hotel or Event Activities	1,828.50	kg CO2e
Organisation Water Usage	177.90	kg CO2e
Transmission & Distribution Losses	259.51	kg CO2e
Well to Tank	30,799.03	kg CO2e
Total	38,891.28	kg CO2e
Total (tonnes)	38.89	t CO2e

Total

Total Organisation Emissions	159.17	t CO2e
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3 - Context



3.1 The purpose of this report

This Carbon Emission Report will measure and calculate the total Greenhouse Gas (GHG) Emissions produced directly and indirectly from the organisations activities. Compulsory for Large Organisations as part of their Streamlined Energy and Carbon Reporting (SECR), HM Government encourages all organisations to take action and measure their emissions on a voluntary basis - as the most effective tool in monitoring and reducing an organisations climate impact.

GHG Emission (also referred to as Carbon Footprint) Calculation, Offsetting and Reducing are now the most popular method for businesses to make an environmental impact as part of their Corporate Social Responsibility policies due to the accurate and measured methodologies, providing complete transparency about their climate impact and resulting actions. Annual emissions reports are regularly used by organisations to track their progress in achieving emissions reductions across the business over time, and in many cases helps identify areas within the business that produce the most emissions - as an area to focus and improve.

Most importantly of all, carbon emission reports also help identify an organisations total carbon footprint - measured in tonnes of carbon dioxide equivalent (tCO₂e), a set unit to ensure carbon offsetting is accurate, and will reverse the organisations environmental impact to achieve carbon neutral status - increasingly important for customers, shareholders, employees and other stakeholders.

3.2 The Kyoto Protocol Greenhouse Gases (GHGs)

Seven Greenhouse Gases are calculated as part this emissions report, known as the seven Kyoto Protocol GHGs. These gasses occur the most often as a result of business activities, with the highest Global Warming Potential. For the purposes of emissions reporting, these gases are simplified and measured in the unit of tonnes of carbon dioxide equivalent (tCO₂e). The Global Warming Potential (GWP) of these gases are not the same however, which creates the unit equivalence compared to carbon dioxide over a period of 100 years (shown below). The latest AR5 values have been used.

GHG	Formula	GWP (CO ₂ e)
Carbon Dioxide	CO ₂	1
Methane	CH ₄	28
Nitrous Oxide	N ₂ O	265
Hydro fluorocarbons	HFCs	Depends on specific gas
Sulphur hexafluoride	SF ₆	23,500
Perfluorinated compounds	PFCs	Depends on specific gas
Nitrogen trifluoride	NF ₃	16,100

3.3 Calculating Emissions & Emissions Factors

The emissions calculations have been made using client-supplied activity data, with assumed full disclosure of all relevant and necessary information. The data received (such as energy usage in Kwh, or vehicle mileage) are then multiplied by the relevant emissions factors from published and reputable sources. Depending on the needs of the organisation the emissions factors used in some cases are scientific research journals or independent studies, but in most cases are from HM Government publications. Most commonly used - UK Government Conversion Factors for Company Reporting (Year: 2023, Expiry: 10/06/2024, Version 1.1) - DBEIS / DEFRA). Any assumptions or estimations of relevant data are published within this report.

3.4 Reporting Standards

GHG emissions reports are most widely carried out in accordance with the ISO 14064:1-2018 and GHG Emissions Protocol Accounting and Reporting Standards, whose methodologies have been used in the creation of this report.

The International Organisation of Standardisation (ISO) created the ISO 14064 standard in 2006, updating in 2018 to specify the principles and requirements at the organisational level for the quantification and reporting of greenhouse gas (GHG) emissions and removals. It includes requirements for the design, development, management, reporting and verification of an organization's GHG inventory.

The "Greenhouse Gas Protocol - Corporate Accounting and Reporting Standard" (GHG Protocol, 2011) developed in a partnership of the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI) follow a similar methodology mirroring those of the ISO standard.

Using the two most widely recognised and used emission standards in the world, ensure all measurements, calculations and subsequent offsetting are completed to the most regulated and accurate standards possible.

3.4 Scopes of Emissions

Using the ISO 14064 and GHG Emissions Protocol Standards, business emissions are identified using three scopes of emissions:

Scope 1 (Direct emissions)

Activities owned or controlled by the organisation that release emissions straight into the atmosphere.

For manufacturing business these would be emissions from equipment and machinery used in production. Businesses that own or lease vehicles are also included within scope 1. For many office-based businesses, scope 1 emissions are usually very small.

Scope 2 (Energy indirect)

Emissions being released into the atmosphere associated with the consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of the organisation's activities - but occur at sources that the business does not own or control.

These emissions would be the energy usage by the organisation and staff working at sites under the operational control of the business.

Scope 3 (Other indirect)

Emissions that are a consequence of business activity, which occur at sources which are not owned or controlled, which are not classed as scope 2 emissions.

Scope 3 emissions can be quite broad, including areas such as waste management, business travel, staff commuting, events, the emissions produced from delivery to and from the organisation (including third party delivery services), transmission and distribution losses associated with electricity usage, and well to tank emissions from combustion fuels.

3.5 Radiative Forcing

Radiative forcing (RF) is a measure of the additional environmental impact of aviation. These include emissions of nitrous oxides and water vapour when emitted at high altitude.

HM Government guidance recommends organisations should include the influence of radiative forcing RF in air travel emissions to capture the maximum climate impact of their travel habits. As such, radiative forcing has been included within the emission factor calculations of air travel within this report and future reports, where applicable.

3.6 Quality and Accuracy

The accuracy of a GHG assessment is directly related to the quality of the activity data provided, and for this assessment and report, 'primary data' (such as electrical usage in Kwh for the reporting period), have been used wherever possible. 'Secondary data' in the form of estimates, extrapolations and/or industry averages has been used when primary data is not available - to provide as accurate estimates of emissions as possible.

In addition, this report has been completing following the WRI GHG Protocol principles of relevance, completeness, consistency, transparency and accuracy.



4 - Methodology



4.1 Business Introduction

Carbon Neutral Britain was engaged by 2D Building Contractors Ltd in order to measure and calculate the organisation's total carbon footprint for 2023/24, with the purpose of offsetting their total organisation emissions - to continue their Carbon Neutral status.

As building contractors, it was identified that the main emissions were to occur from company owned/leased vehicles and the mileage completed within the reporting period.

4.2 Operational Boundary and Data

Using the operational control consolidation approach was determined as the best method for 2D Building Contractors Ltd, due to the standard business structure and business practices. As a result, the following scope of data was collected.

Scope 1 - Stationary and Mobile Source Emissions (equipment and quantity combusted), Company Owned and Leased Vehicles (vehicle type and distance travelled), Refrigerant Gas Losses (refrigerant type and new/disposed units) for the organisation only.

Scope 2 - Energy (electricity, imported heat, steam in kwh) from the office and vehicles, using the location based method.

Scope 3 - Homeworking Energy (Days), Water (consumption and waste volume), Waste (landfill, recycled and composted weight), Business Travel (type and distance), Staff Commuting (average distance and type), Hotel Stays (UK, Europe or Worldwide days), Transmission and Distribution losses associated with electricity usage (kwh) and Well To Tank emissions from combustion fuels (volume combusted).

4.3 Assumptions and Estimations

Where primary emissions data could not be collected, the following assumptions and estimations were used:

- Vehicle emissions were calculated using Defra vehicle categories and HM Government Emission Factors (2023).
- Water consumption figures were estimated for the organisation.
- Water waste figures were estimated based on water consumption data.
- Transmission and distribution losses associated with electricity usage, as well as 'well to tank' emissions from combustion fuels were included in the assessment.
- Any incidental emissions less than 1% from the sources measured were not included within this report.

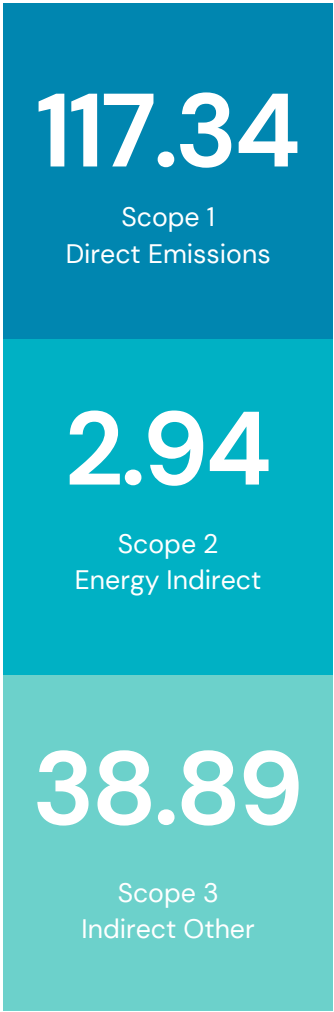
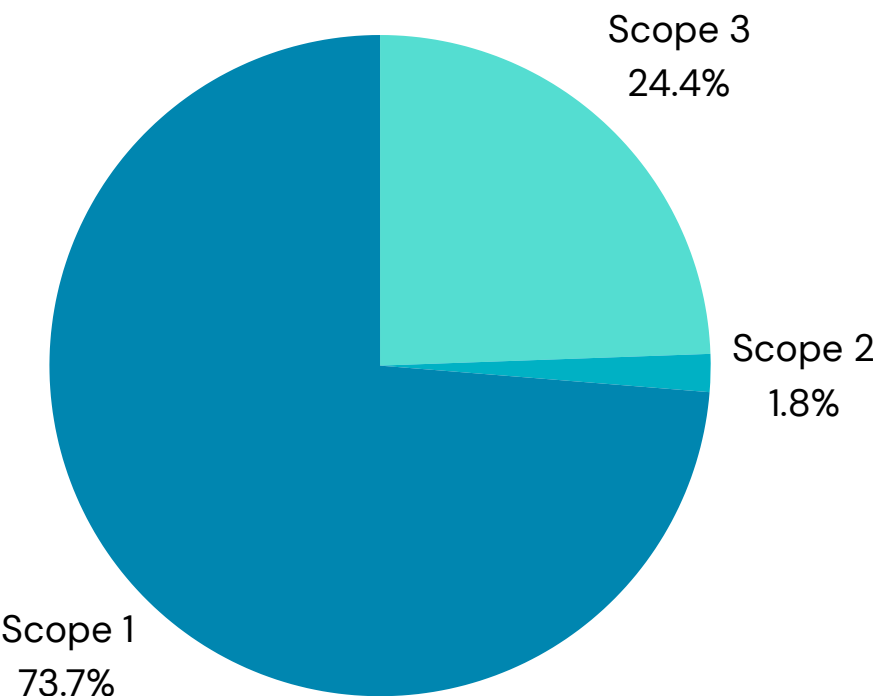


5 - Results

5.1 Summary

2D Building Contractors Ltd Carbon (GHG) Emissions

Reporting Period - 01/11/23 - 31/10/24



Total Carbon Footprint	GHG Emissions 2023/24 - 159.17 tCO ₂ e
	GHG Emissions per FTE - 4.55 tCO ₂ e
159.17 tCO ₂ e	Completed November 2024

5.2 Emissions by Scope



The main Scope 1 emissions occurred from the company owned/leased vehicles, and the mileage completed within the reporting period. Other emissions occurred from stationary or mobile combustion sources.



All Scope 2 emissions occurred from electricity consumption within the reporting period.



The main Scope 3 emissions occurred from business travel. Other emissions occurred from the energy consumption from waste, staff commuting, business hotel stays, water usage, transmission and distribution losses and well to tank emissions.



6 - Carbon Neutral Certification

6.1 Carbon Neutral Status



In November 2024, 2D Building Contractors Ltd offset their carbon footprint to become certified as a Carbon Neutral Business by Carbon Neutral Britain.

As certification awarded by an external organisation, it provides assurance that the carbon neutral claim is robust and credible, following calculation using the ISO 14064 and GHG Protocol Emissions Standard principles of relevance, completeness, consistency, transparency and accuracy.

Carbon Neutral Status has been awarded to the organisation for a period of 12 months.

It is recommended the organisation completes an annual calculation of its environmental impact and emissions in 2024, to further monitor and evaluate emissions changes after implementing reduction strategies, in addition to offsetting and maintaining carbon neutral status.



6.2 Carbon Offsetting Projects

Through the Carbon Neutral Britain Climate Fund™, 2D Building Contractors Ltd has offset its total carbon emissions through internationally certified carbon offsetting projects.

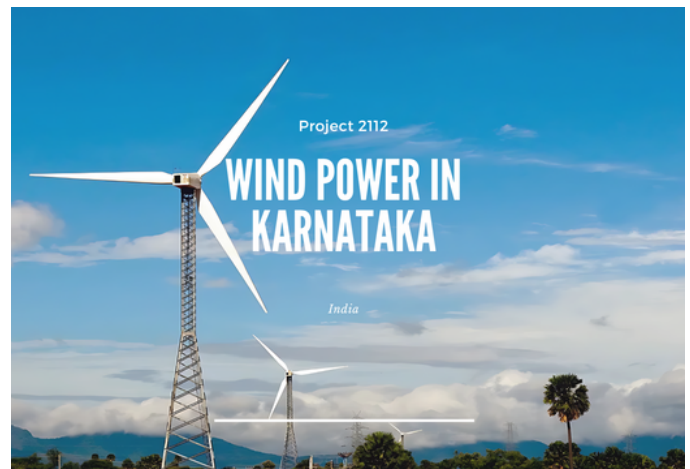
Certified via the Verra - Verified Carbon Standard (VCS), the Gold Standard - Voluntary Emission Reductions (VER) or the United Nations - Certified Emission Reductions (CER) programmes, the projects have also been selected based on their direct and indirect impact around the world - not just in offsetting, but also in supporting education, employment and clean water, as well as having net positive impact on the local wildlife and ecology.

As the three largest, and most regulated voluntary offsetting standards used by organisations and even countries in their emissions reductions - all measurements and tonnes of CO₂e offset are accurate, and verified.

An example of projects supported include:



Project 2151: Household Solar Lighting in Zambia



Project 2112: Wind Power in Karnataka



Project 2256: Elazig Solar Farm in Turkey



Project 1165: Salkhit Wind Farm in Mongolia

7 - Carbon Reduction Plan (CRP)

7.1 Reduction Overview

IPCC studies (and COP discussions) have highlighted the importance of businesses making a difference in the next 5 years before changes to the climate are irreversible, and by Carbon Offsetting and becoming Carbon Neutral, 2D Building Contractors Ltd is proactively doing its part for the planet now - when it is the most important.

In addition to Carbon Offsetting and Carbon Neutral status - it is recommended that 2D Building Contractors Ltd takes further action to reduce its future emissions - as much as practically possible. By reducing all avoidable emissions to zero - the organisation will achieve Net Zero status.

7.2 Science Based Targets

As part of the 2015 Paris Agreement, world governments committed to curbing global temperature rise to well-below 2°C above pre-industrial levels, and pursuing efforts to limit warming to 1.5°C. In 2018, the IPCC warned that global warming must not exceed 1.5°C to avoid the catastrophic impacts of climate change.

It was agreed that to achieve this, GHG emissions must halve by 2030 – and drop to Net Zero by 2050. In order to align with these Science Based Targets - 2D Building Contractors Ltd must commit to reducing half of its GHG emissions by 2030, and to achieve Net Zero by 2050.



7.3 Procurement Policy Note 06/21

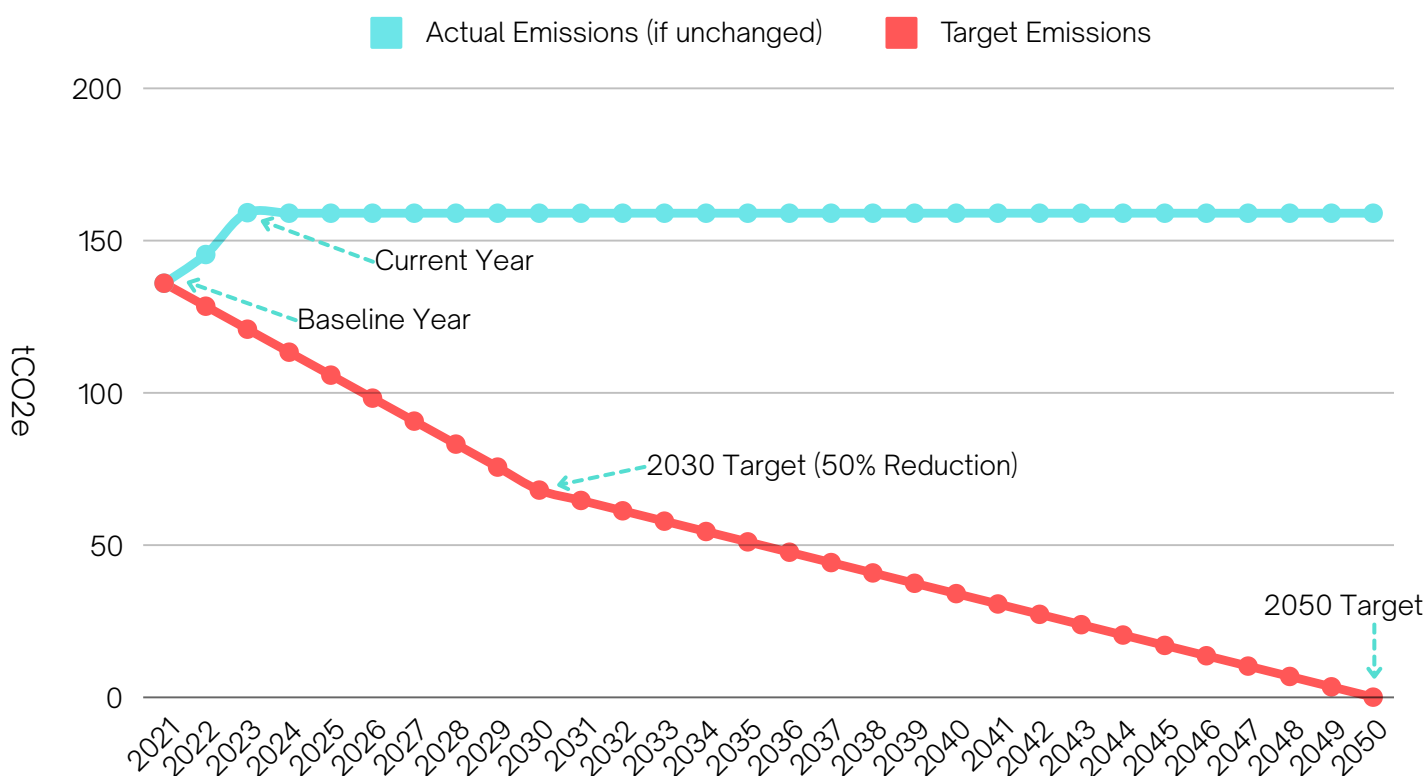
The UK Government amended the Climate Change Act 2008 in 2019 by introducing a target of at least a 100% reduction in the net UK carbon account (i.e. reduction of greenhouse gas emissions, compared to 1990 levels) by 2050. This is otherwise known as the 'Net Zero' target.

To aid in this target, UK suppliers to government contracts are required to meet the requirements of Procurement Policy Note (PPN) 06/21, by providing a Net Zero Carbon Reduction Plan.

In addition to calculating Scope 1, 2 and a subset of Scope 3 emissions in tCO₂e for the six greenhouse gases covered by the Kyoto Protocol (as outlined in this report), 2D Building Contractors Ltd is required to make a commitment to achieving net zero by 2050, outline its reduction plans, and publish its Carbon Reduction Plan (CRP) on its website.



7.4 Reduction Target Plan



In order to achieve a 50% reduction in emissions by 2030, 2D Building Contractors Ltd is required to reduce its emissions by **68.01 tCO2e** from the 'Baseline' (first year) assessment by 2030.

This will require a reduction of **5.55%** (7.55 tCO2e) per year from the 'Baseline' (first year) assessment of the organisation. A further reduction of **2.5%** (3.40 tCO2e) each year is then required in order to achieve Net Zero.

Should significant changes to the business size and structure occur in the future - Carbon Neutral Britain will amend the 'baseline' assessment year, as well as look at intensity values (tCO2e per million turnover, FTE or other metric), to further track and implement reduction strategies.

"By accurately measuring, offsetting and committing to annually reduce emissions 5.55% by 2030, 2D Building Contractors Ltd is not only Carbon Neutral, but in alignment with both Science Based and UK Government targets for Carbon Emissions Reductions"

James Poynter
Director - Carbon Neutral Britain

7.5 Reduction Strategies



Although some emission reductions will require technological and third party improvements, it is recommended that 2D Building Contractors Ltd targets the three largest emissions sources of the organisation, in order to make the most impactful, and quickest reduction in emissions possible. The three largest emission sources are:

Company Owned/Leased Vehicles - 114.83 tCO₂e (72% of total emissions)

Business Travel - 3.67 tCO₂e (2% of total emissions)

Energy Usage on Site - 2.94 tCO₂e (2% of total emissions)

Recommendations for the organisation are as follows:

Company Vehicle Emissions

Company-owned and leased vehicles are a large source of Scope 1 emissions for 2D Building Contractors Ltd, with an increase in mileage this year. Last year, the company fleet emitted 104.87 tCO₂e, whereas this year, it emitted 114.83 tCO₂e, a 10% increase. This rise in mileage has led to a corresponding increase in emissions, highlighting the potential for targeted action to manage and reduce the environmental impact of company vehicle use.

Potential opportunities for the company are:

Fuel Efficiency and Journey Optimization: Optimizing vehicle routes and journey planning could immediately reduce emissions. Internal guidelines could be established to ensure drivers prioritize economical routes, minimizing overall mileage. Utilizing fleet management systems could help monitor vehicle usage, identify the most efficient routes, and reduce unnecessary travel.

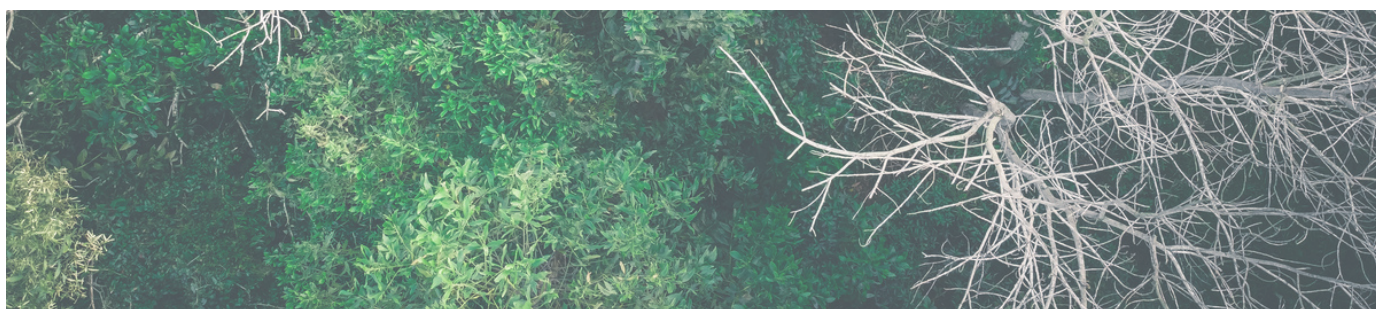
Transition to Low-Emission Vehicles: The most impactful way to address the increased emissions is by transitioning to hybrid or electric vehicles within the company fleet. 2D Building Contractors Ltd could explore available grants or funding options to support this transition. Replacing older, less efficient vehicles with electric or hybrid models could enhance fleet sustainability and reduce emissions.

Internal Education and Eco-Driver Training: Providing education on eco-driving techniques and emphasizing efficient route planning could help mitigate the impact of increased mileage. Implementing training programs focused on fuel-efficient driving habits, such as reducing idle time, smooth acceleration, and maintaining consistent speeds, could lead to incremental but meaningful improvements. Staff could also be encouraged to select the shortest, most economical routes to further reduce mileage and fuel consumption.

Relevant Schemes and Support:

- **Plug-In Vehicle Grant:** Government incentives could help offset the costs of adopting electric vehicles, making them a more feasible option for fleet replacement.
- **Eco-Driver Training Programs:** Offering training or workshops on efficient driving techniques could equip drivers with the skills needed to operate vehicles sustainably.
- **Fleet Management Software:** Investing in technology to track vehicle performance, fuel efficiency, and route planning could provide valuable insights and help optimize fleet operations.

By targeting these areas, 2D Building Contractors Ltd could effectively manage the rising emissions from increased vehicle use.



Business Travel

Business travel, especially by air and personal vehicles, is a large source of emissions for 2D Building Contractors Ltd. Reducing travel-related emissions requires targeted action across car travel, flights, and train journeys.

Switching to low-emission vehicles, encouraging carpooling, and collecting data on vehicle fuel types could reduce car travel emissions. Replacing flights with virtual meetings, choosing direct routes, and flying economy class could also cut down emissions. For train travel, leveraging digital platforms to minimize trips and exploring discounts with rail/public transport companies could further reduce emissions.

Targeting these areas will help 2D Building Contractors Ltd reduce travel emissions and promote sustainable practices.

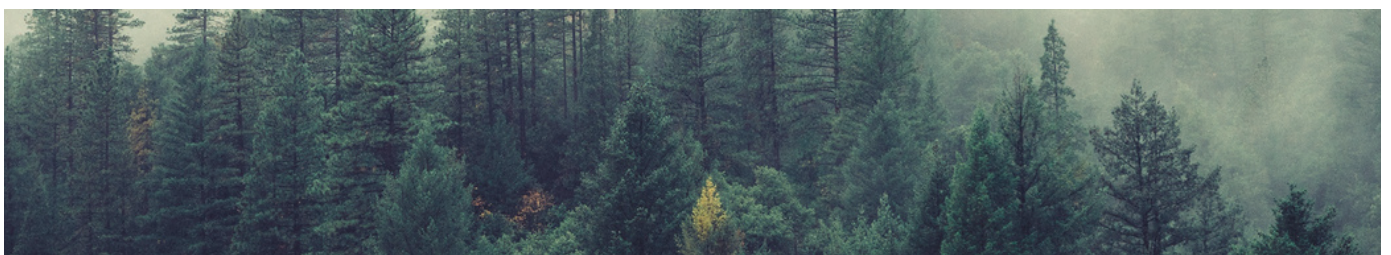
Electricity Consumption

During the reporting period, electricity emissions have reached a large proportion of the business's overall emissions and highlight the opportunities of adopting strategies to reduce electricity consumption.

Reducing electricity usage is important for minimizing emissions, and it remains a key area for improvement. Implementing energy-efficient lighting, equipment, and appliances across 2D Building Contractors Ltd's operations could lead to large reductions in electricity consumption. Additionally, adopting smart energy management systems to monitor and control usage could further optimize efficiency.

For leased sites where infrastructure changes may be limited, moving to a more energy-efficient location could be explored. Promoting hybrid working arrangements to reduce office occupancy could also help lower electricity use, as working from home typically consumes less energy compared to office environments. Downsizing office space or adopting flexible workspaces could provide additional savings in energy requirements.

By targeting these opportunities, 2D Building Contractors Ltd could effectively reduce electricity-related emissions and contribute to a more sustainable operational footprint.



8 - Contact



2024 The Year to Make a Difference

Help Support Climate Action

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