Carbon Footprint Appraisal Report

Carbon Footprint Appraisal for Associated Asphalt Contracting Ltd

Assessment Period:
1st January 2021 – 31st December 2021

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Executive Summary

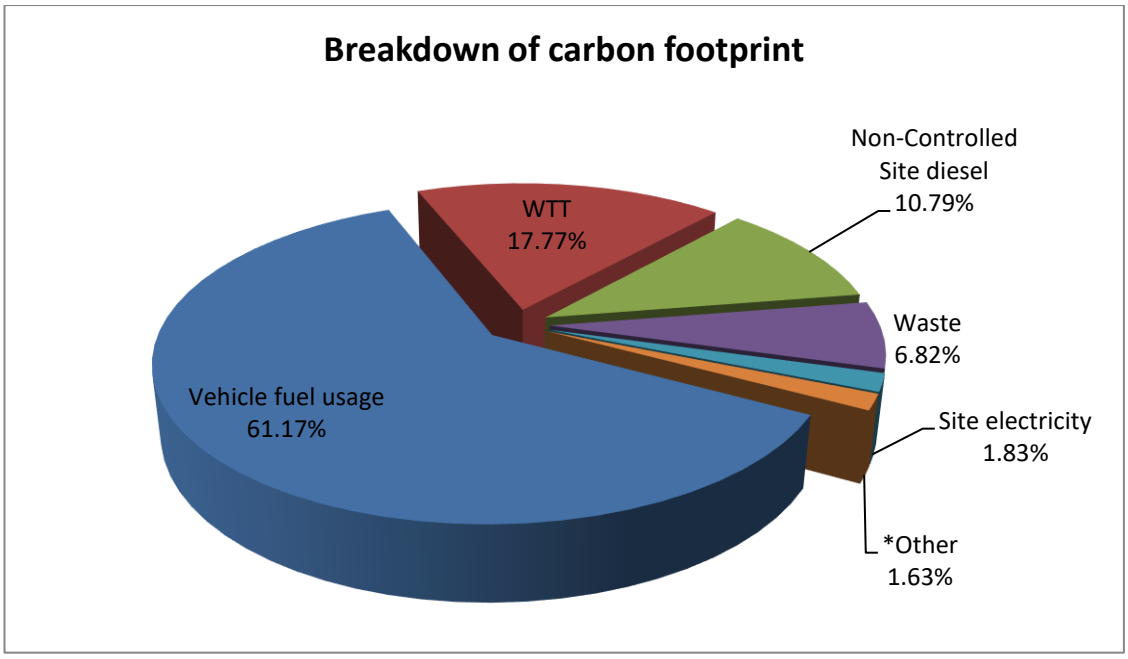
Carbon Footprint Ltd has assessed the greenhouse gas (GHG) emissions of Associated Asphalt Contracting Ltd (Associated Asphalt) from 1st January 2021 to 31st December 2021 based on a dataset provided by the company.

Current Performance

- → Associated Asphalt's total emissions are 690.35 tonnes of carbon dioxide equivalent.
- → The most significant emission source is vehicle fuel usage accounting for 61.17% of Associated Asphalt's carbon footprint (excluding Well-To-Tank).

Recommendations

- → Offset the GHG emissions created within this data period to obtain carbon neutrality.
- → When leasing/purchasing new specialist vehicles, consider transitioning to electric vehicles alternatives (EV), as well as installing charging points on-site to encourage staff to switch to electric domestic vehicle alternatives too.
- → Evaluate the effectiveness of using remote meetings and limited travel during COVID-19 and re-define what your business classifies as "essential" travel going forwards.
- → Expand the scope of the assessment to include those emissions associated with Associated Asphalt's purchased materials, in order to provide a more comprehensive accounting of the company's emissions in future assessment years.



Other* includes site gas, taxi travel, and outsourced logistics

Metric	2021 footprint (tCO_2e)
Total Tonnes CO_2e	690.35
Tonnes of CO_2e per employee	13.81
Tonnes of CO_2e per £M turnover	18.17

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Quality Control

Report issue number:	1.0
Date:	20 April 2022
Calculations completed by:	Joe Murray
Calculations reviewed by:	Myles Howard
Report produced by:	Joe Murray
Report reviewed by:	Myles Howard
Director approval:	Dr. Wendy Buckley

1. Introduction

1.1. Company Overview

Associated Asphalt is a civil engineering enterprise which offers comprehensive and multi-disciplined solutions to infrastructures projects within the highways, airfield, and construction sectors.

Associated Asphalt Contracting Ltd work with Government organisations such as Highways England and Crown Commercial Services and the Ministry of Defence on high-profile projects. The company was formed in 2014, and currently has around 50 members of full-time staff. These employees are based in across three sites, all located within the UK, including the company's HQs in Dartford.

1.2. Associated Asphalt's carbon management journey

Carbon Footprint provides a simple six step annual journey to enhance your sustainability credentials whilst complying to best practice and differentiating your brand. Associated Asphalt has completed the first step of its annual carbon management journey.

The purpose of this report is to:

- Summarise the results of the carbon footprint assessment.
- Provide practical recommendations to enhance your sustainability programme and reduce your emissions.

1.3. What is a carbon footprint?

A carbon footprint is a measure of the impact our activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide equivalents (CO_2e). A carbon footprint is made up of two parts, direct and indirect emissions.

1. **Direct emissions:**
   Direct emissions are produced by sources which are owned or controlled by the reporting organisation and include electricity use, burning oil or gas for heating, and fuel consumption as a result of business travel or distribution. Direct emissions correspond to elements within scope 1 of the World Resources Institute GHG Protocol, as indicated in Table 1.

Table 1: Direct emissions sources

Footprint	Activity	Scope
Direct	Electricity, heat, or steam generated on-site	1
	Natural gas, gas oil, LPG or coal use attributable to company-owned facilities	1
	Company owned vehicle travel	1
	Production of any of the six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs and SF_6)	1

2. **Indirect emissions:**
   Indirect emissions result from a company's upstream and downstream activities. These are typically from outsourced/contract manufacturing, and products and the services offered by the organisation. Indirect emissions correspond to scopes 2 and 3 of the World Resources Institute GHG Protocol excluding employee business travel as indicated in Table 2.

Table 2: Indirect emissions sources

Footprint	Activity	Scope
Indirect	Consumption of purchased electricity, heat steam and cooling	2
	Employee business travel (using transport not owned by the company)	3
	Employee commuting	3
	Transportation of an organisation's products, materials, or waste by another organisation	3
	Outsourced activities, contract manufacturing and franchises	3
	GHG emissions from waste generated by the organisation but managed by another organisation	3
	GHG emissions from the use and end-of-life phases of the organisation's products and services	3
	GHG emissions arising from the production and distribution of energy products, other than electricity, steam, and heat, consumed by the organisation	3
	GHG emissions from the production of purchased raw or primary materials	3
	GHG emissions arising from the transmission and distribution of purchased electricity	3

For businesses, the assessment focuses on direct emissions, as these lie under the control of the organisation. However, we ask companies to recognise that there is an indirect emissions footprint and select suppliers based on their environmental credentials alongside price and performance.

1.4. Why is it important?

Climate change is a global threat which will impact the lives of everyone on the planet.

Over the past two decades the effects of climate change have accelerated. Considerable evidence exists proving climate change has been exacerbated by human activity. Changes in our post-industrial lifestyles have altered the chemical composition of the atmosphere, generating a build-up of greenhouse gases – primarily carbon dioxide, methane, and nitrous oxide levels – raising the average global temperature.

The consequences are already evident and will continue to worsen unless significant action is taken and quickly. **Sea level will continue to rise and local climate conditions to be altered, causing an increase in extreme weather events, affecting forests, crop yields, and water supplies. This can lead to homelessness, famine and conflict as resources become scarcer.**

Environmental pollution and climate change affect human health, accelerate species extinction, and disrupt vital ecosystems. **Ambient (outdoor) air pollution is responsible for at least 4 million human**

deaths each year[1]. In addition to this, poor air quality and issues of clean water availability leave us more susceptible to diseases such as COVID-19. Combined with rises in temperature and deforestation (from direct human action and climate change related events), resulting in the displacement of animals from their native habitats, the frequency of disease occurrence will increase, as disease will transfer from animals to other geographical areas and larger human populations.

It is vital that all individuals, businesses, organisations and governments work towards the common goal of reducing greenhouse gas emissions. This carbon footprint assessment will enable Associated Asphalt to begin doing its bit by monitoring, reducing and offsetting its emissions.

1.5. ISO 14064: 2018

This GHG report has been prepared in accordance with Part 1 of ISO 14064: 2018. The GHG inventory, report, or statement has not been verified.

This standard requires the estimation of likely error margin based on a simple error analysis, to identify uncertainty in the calculations. Our simple error analysis provides a level of uncertainty based on the accuracy of the data provided. This shows the error for each emissions source, as well as the sum of these divided by the total emissions, to produce a total percentage error.

1.6. Calculation methodology

The carbon footprint appraisal is derived from a combination of client data collection and data computation by Carbon Footprint's analysts.

Carbon Footprint's analysts have calculated Associated Asphalt's footprint using the 2021 conversion factors developed by the UK Department for Environment, Food and Rural Affairs (Defra) and the Department for Business, Energy & Industrial Strategy (BEIS). These factors are multiplied with the company's GHG activity data. Carbon Footprint has selected this preferred method of calculation as a government recognised approach and uses data which is realistically available from the client, particularly when direct monitoring is either unavailable or prohibitively expensive.

Well-to-Tank (WTT) emissions factors (DEFRA 2021) have also been used to calculate the upstream emissions for fuels and energy. The emissions factors include an average of all GHG emissions released in the production, processing and delivery of fuels or energy.

Additional methodology information is presented in Annex A.

1.7. Data supplied for the carbon footprint appraisal

A summary of the data supplied by Associated Asphalt for the appraisal is presented in Annex B.

[1] World Health Organisation. https://www.who.int/health-topics/air-pollution

1.8. Abbreviations

A/C	Air Conditioning
BEIS	Department for Business Energy & Industrial Strategy
BIK	Benefit In Kind
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organisation
km	Kilometres
kWh	Kilowatt Hours
NIC	National Insurance Contribution
PAYE	Pay As You Earn
PHEV	Plug-in Hybrid Electric Vehicle
UN	United Nations
WTT	Well-To-Tank

2. Calculation Scope and Accuracy

2.1. Scope of this work

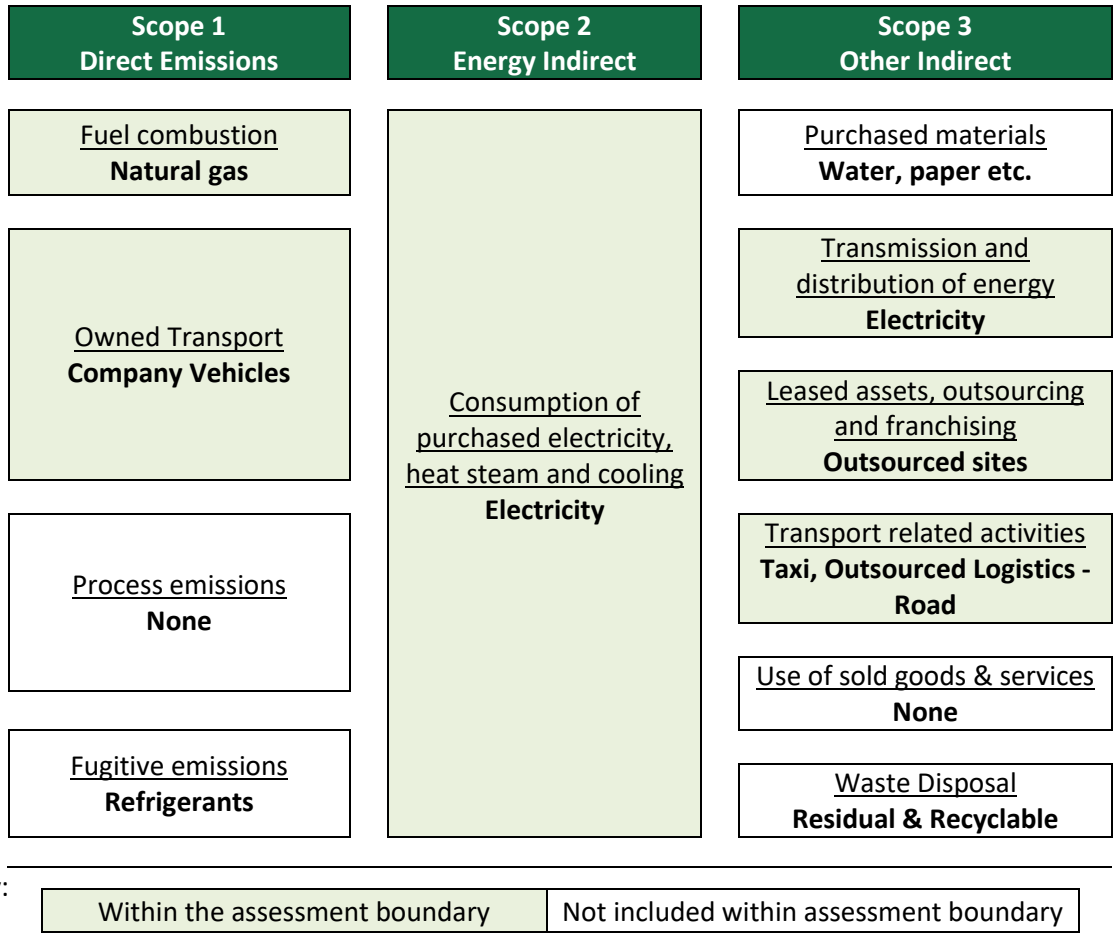
Carbon Footprint has assessed the GHG emissions from 1st January 2021 to 31st December 2021 resulting from the energy consumption at Associated Asphalt's facilities and its business transport activities.

This report will set the base year for all further reporting emissions to be compared against.

2.2. Organisational & reporting boundaries

The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has financial control. The assessment covers the following reporting boundaries:

Figure 1: Assessment boundary



Indirect GHG sources that are outside the assessment boundary have been excluded from quantification as it is not technically feasible or cost effective, to include these in the GHG assessment.

2.3. Calculation accuracy & 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 which will subsequently allow for better targeting of areas where improvements can be made. Materiality is determined by the percentage contribution of each element to the overall footprint. The data provided is derived from energy bills, expenses claims, and data collected by Associated Asphalt (Table 3). Based on the accuracy of the data provided, a simple error analysis has been used to estimate the error margin for the appraisal results.

Table 3: Assessment accuracy, materiality, and simple error analysis

Dataset	Data source / comments	Accuracy	Materiality	Uncertainty	Error Margin (tCO_2e)
Vehicle fuel usage	Includes business mileage for all company vehicles, including specialist vehicles and grey-fleet mileage. With current data collection methods vehicle fuel cannot be split into separate categories (with this identified as an area of improvement for future assessment) and total diesel usage and LPG figures therefore encompass the entire company fleet. Data has been collected via fuel cards and internal company expense records. Vehicle usage at the outsourced mobile Heathrow asphalt plant has also been included; encompassing specialist vehicle used and business travel mileage.	Very Good	Very High (>40%)	5%	26.1
Non-Controlled Site diesel	Data was sourced from internal purchase records totalling litres of site diesel delivered into site.	Very Good	Medium (5-20%)	5%	4.6
Waste	Data was provided from waste provider report, including waste type and total waste in tonnes produced per year.	Very Good	Medium (5-20%)	5%	0.0
Site electricity	CIBSE factors used to estimate electricity usage as the sites are all leased without access to bills. Dartford site is 70m^2 with no A/C, Heathrow site is 65m^2 with 1 x A/C, and Bury site is 150m^2 with 1 x A/C.	Average	Low (1-5%)	50%	7.9
Site gas	CIBSE factors used to estimate gas usage as the sites are all leased without access to bills. Dartford site is 70m^2 with no A/C, Heathrow site is 65m^2 with 1 x A/C, and Bury site is 150m^2 with 1 x A/C.	Average	Low (1-5%)	50%	5.2
Taxis	Data was sourced from internal expense reports, totalling annual distance of business milage in taxis, vehicle make and model.	Excellent	Very Low (<1%)	1%	0.0
Outsourced Logistics - Road	Distance was estimated based on internal company records; cargo weight was actual data base from internal purchase records.	Very Good	Very Low (<1%)	5%	0.0
Total				**+/- 6%**	**+/- 43.9**

3. Carbon Footprint Results

3.1. Summary of results

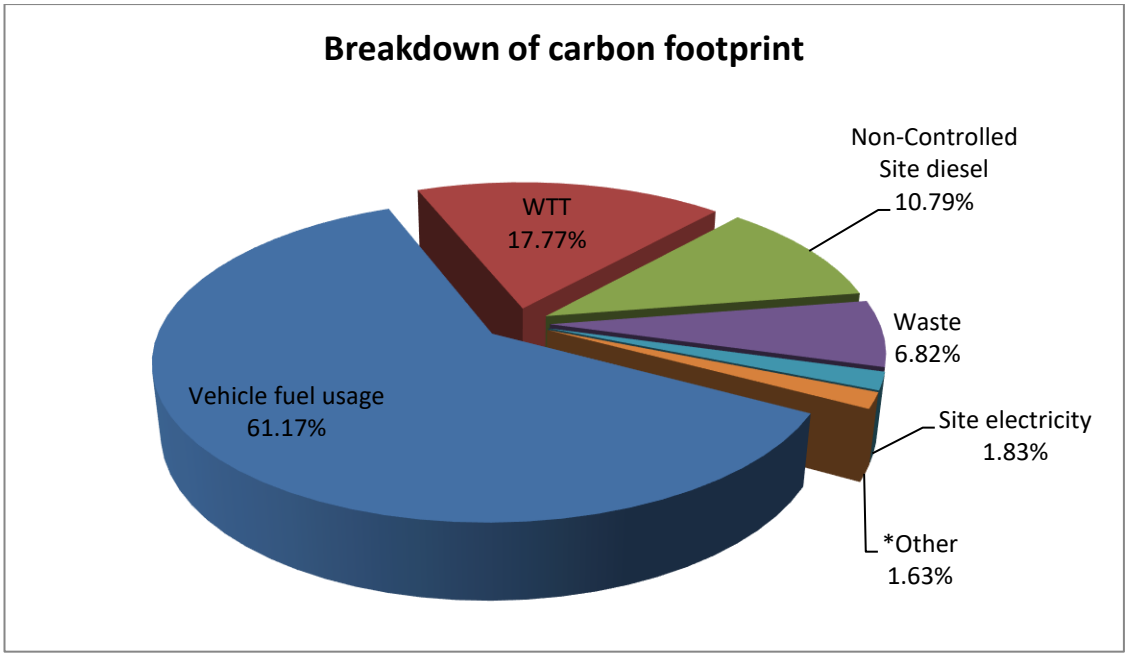
The total carbon footprint for Associated Asphalt for the period ending 31st December 2021 was 690.35 tonnes CO_2e. Table 4 and Figure 2 summarise the results of Associated Asphalt's carbon footprint calculation by scope and source activity.

Table 4: Results of Associated Asphalt's carbon footprint assessment by scope and source activity

Scope	Activity	Location-Based
Scope 1	Vehicle fuel usage[2]	422.29
	Site gas	8.95
Scope 1 Sub Total		**431.23**
Scope 2	Electricity generation	11.58
Scope 2 Sub Total		**11.58**
Scope 3	Well To Tank	122.64
	Non-Controlled Site diesel	74.49
	Waste	47.08
	Taxis	1.85
	Electricity transmission & distribution	1.02
	Outsourced Logistics - Road	0.45
Scope 3 Sub Total		**247.54**
Total tonnes of CO_2e		**690.35**
Tonnes of CO_2e per employee		**13.81**
Tonnes of CO_2e per £M turnover		**18.17**

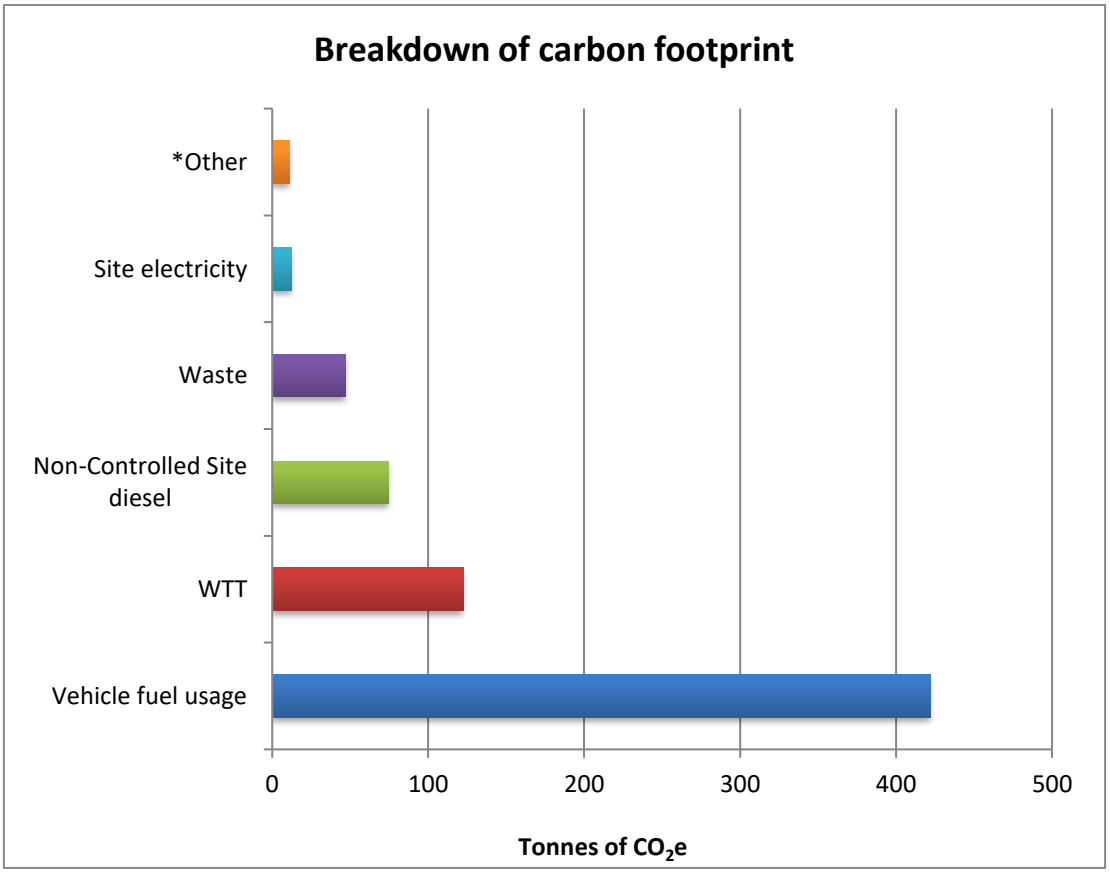
Most of the emissions come from vehicle fuel usage as shown in Figure 2 and Figure 3. The other most significant sources of emissions are vehicle fuel usage and Well-To-Tank.

[2] Vehicle fuel usage includes emissions associated with the company's grey-fleet travel, due to data availability constraints. The total contribution from these vehicles is likely to represent only a relatively small percentage of overall emissions from this source and has been identified as a priority area for improvement in future assessment.



***Other- includes site gas, taxi travel, and outsourced logistics**

Figure 2: Percentage contribution of each element of Associated Asphalt's carbon footprint



***Other- includes site gas, taxi travel, and outsourced logistics**

Figure 3: Breakdown of Associated Asphalt's footprint

3.2. Emissions from energy usage at site facilities

Associated Asphalt operates out of 3 controlled sites within the UK, from Heathrow Colebrook, Bury St. Edmunds, and the main site at Dartford and a non-controlled site at Heathrow Asphalt Plant. The most energy intensive controlled site is Bury St. Edmunds, which can be seen in Table 5 and Figure 4.

Table 5: CO_2e emissions as a result of site energy consumption

Site	Electricity (tCO_2e)	Gas (tCO_2e)	Site Diesel	Total tCO_2e	Total site Emissions (%)
Dartford	1.38	1.94	-	3.31	3.44%
Heathrow Colebrook	3.40	2.12	-	5.51	5.73%
Bury St. Edmunds	7.83	4.89	-	12.73	13.25%
Heathrow Asphalt Plant	-	-	74.49	74.49	77.56%
Total	**12.61**	**8.95**	**74.49**	**96.04**	**100%**

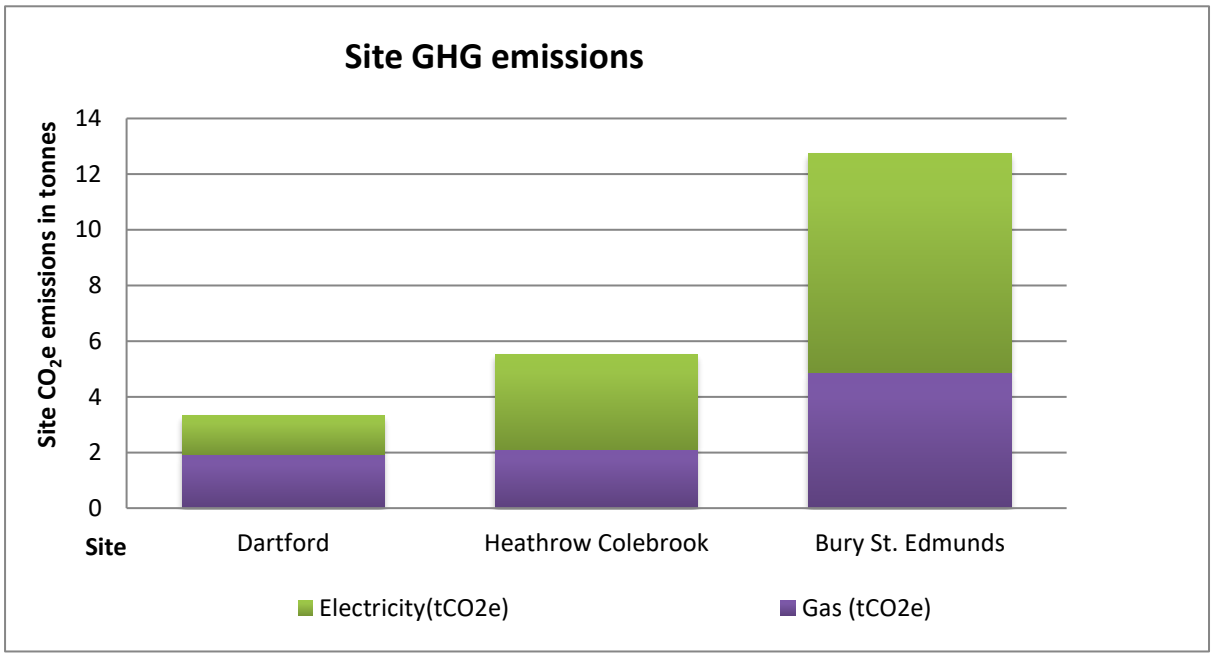


Figure 4: CO_2e emissions on a per site and fuel basis

All controlled site emissions have been calculated based on the square meterage of the office multiplied by the average emissions for electricity and gas per square meter for the office type (CIBSE factors). This method of calculation is subject to a relatively high margin of error, and it is therefore recommended contacting the bill-payer at these sites to gain access to the utility bills. This would increase the accuracy of the carbon footprint calculations and could lead to being able to track and increase the energy efficiency through site audits and behavioural changes.

The Heathrow Asphalt mobile plant has a larger carbon footprint then any of Associated Asphalt-controlled sites. This can be expected due to the source of the emissions from this site being associated with diesel consumption (required for generator usage) and which is more carbon intensive than electricity and natural gas usage.

3.3. Emissions from travel and logistics

The most significant source of travel-related emissions is that from vehicle fuel usage, accounting for over 99% of total emissions from this source, as shown in Table 6. Furthermore, travel-related emissions account for 75.9% (424.59 tCO_2e) (excluding Well-To-Tank emissions), of Associated Asphalts total emissions. Vehicle fuel accounts for all company vehicles, including specialist vehicles and grey fleet milage. Due to current data collection methods this data cannot be split into the specific categories.

Table 6: CO_2e emissions due to transportation

Type of Travel / Transport	Tonnes of CO_2e
Vehicle fuel usage	422.29
Taxi travel	1.85
Outsourced Logistics - Road	0.45
Total	**424.59**

Business travel and controlled sites data accounts for 385.91 tCO_2e and outsourced sites vehicles usage from project work at Heathrow airport during this appraisal period accounts for 36.38 tCO_2e. All Outsourced Logistics – Road accounts for the movement of materials on sites but does not account for the emissions off site grounds, e.g., travelling to and from the site.

To increase the accuracy of the assessment in future years it is recommended Associated Asphalt modify the company's internal data procurement method to allow for a split in the allocation of fuel usage between different modes of transport and vehicle usage/activity, such as company car, grey fleet, vans etc. Importantly, this will also allow for a more accurate reporting of emissions divided into their component Scopes 1, 2 & 3 sources under the DEFRA guidelines for company GHG reporting. These recommendations would also help to obtain a better insight into the travel-related emissions from Associated Asphalt.

3.4. Emissions from Waste

Associated Asphalt have accounted for there waste emissions in their carbon footprint appraisal. It can be seen in Table 7 that there is a total of 2,211 tonnes of waste produced with the large majority being commercial and industrial waste which can be expected due to the nature of the business.

This waste produced a total of 47.08 tCO_2e during the assessment period. The commercial and industrial waste was disposed of via recycling which dramatically reduced the potential emissions if this was sent to landfill. For example, if all commercial and industrial waste was disposed of in landfill this would have resulted in an expected total of some 1,027.50 tCO_2e (representing an increase of over 2,000% against the current total).

Table 7: Waste Emissions Table

Type of Waste	Waste produced per year (tonnes)	Disposal Route	Total Emissions (tCO_2e)
Commercial and industrial waste, average	2,200	Closed Loop Recycling	46.85
Municipal waste, average	11	Energy Recovery (Combustion)	0.23
Total	**2,211**	**-**	**47.08**

3.5. Emissions from Well to Tank

Well-to-Tank emissions relate to the upstream emissions of fuel and energy; accounting for extraction, processing, and transport of fuels/energy. WTT emissions account for 17.77% of the total footprint for the assessment period. The majority of WTT emissions (80.8%) are associated with vehicle fuel usage. Associated Asphalt can reduce these emissions by reducing fuel and energy usage.

Table 8: Well-To-Tank CO_2e Emissions location-based breakdown

Element of Footprint (Well-To-Tank)	Tonnes of CO_2e
Vehicle fuel usage	99.15
Non-Controlled Site diesel	18.08
Site electricity	3.28
Site gas	1.53
Taxis	0.48
Outsourced Logistics - Road	0.11
Total	**122.64**

4. Comparison and Benchmarking

4.1. Comparison to base year emissions

This report will set the base year for all further reporting emissions to be compared against.

Scope	Activity	Location-Based
Scope 1	Vehicle fuel usage[3]	422.29
	Site gas	8.95
Scope 1 Sub Total		**431.23**
Scope 2	Electricity generation	11.58
Scope 2 Sub Total		**11.58**
Scope 3	Well To Tank	122.64
	Non-Controlled Site diesel	74.49
	Waste	47.08
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	Electricity transmission & distribution	1.02
	Outsourced Logistics - Road	0.45
Scope 3 Sub Total		**247.54**
Total tonnes of CO_2e		**690.35**
Tonnes of CO_2e per employee		**13.81**
Tonnes of CO_2e per £M turnover		**18.17**

Carbon Footprint recommends that organisations use the base-year GHG inventory as a benchmark to measure against. When using the base-year GHG inventory as a benchmark, organisations can set realistic reduction targets and measure their progress year on year. This can also provide excellent marketing opportunities, where real figures can demonstrate your commitment towards helping fight climate change.

[3] Vehicle fuel usage includes emissions associated with the company's grey-fleet travel, due to data availability constraints. The total contribution from these vehicles is likely to represent only a relatively small percentage of overall emissions from this source and has been identified as a priority area for improvement in future assessment.

4.2. External benchmarking

Companies often like to benchmark themselves against similar organisation in their sector. Carbon Footprint Ltd has an online tool you can use to find publicly available information on other organisations that have reported their emission.

The Carbon Benchmarking Tool is free to use and can be found online at:
https://www.carbonfootprint.com/carbon_benchmark.html

Many companies report Scope 1 & 2 emissions for comparison against others as elements included in Scope 3 can vary greatly.

Table ***9*** Summarises the emissions across these Scopes, along with metrics showing emissions per unit turnover and per employee, to help your benchmarking.

Table 9: Associated Asphalt's benchmarked GHG emissions

Year/Element	Location based
Turnover in £million	38.00
Total number of employees	50
Tonnes of CO_2e	690.35
Tonnes of CO_2e per £ million	18.17
Tonnes of CO_2e per employee	13.81
Scope 1 & 2 tonnes CO_2e	**442.81**
Scope 1 & 2 tonnes CO_2e per £ million	**11.65**
Scope 1 & 2 tonnes CO_2e per employee	**8.86**

5. Key Recommendations

The following recommendations are designed to help you build upon the results of the appraisal and your carbon management over the coming year.

5.1. Carbon & sustainability targets

5.1.1. Target setting

Associated Asphalt should set targets to reduce emissions based on per employee and/or per £M turnover, which will account for business growth. As vehicle fuel usage is the largest contributor to emissions which accounts for all company vehicles, targets such as increasing the emissions rating of all company vehicles, both site vehicles and business fleet vehicles should be set along with in the future any company vehicle purchased/leased should be fully electric.

All targets set should be reviewed regularly and amended accordingly (i.e., target increased if it is met ahead of schedule).

Hyperlink to our Target Setting paper below.
https://www.carbonfootprint.com/docs/2021_12_cfp_practical_target_setting_-_white_paper_v10.pdf

5.1.2 Improving the accuracy of future carbon footprint assessments

The estimated overall error margin is +/- 6%.

To improve the accuracy of future assessments, we recommend the following:

- Changing the vehicle fuel log procurement in order to be able to accurately split the overall vehicle fuel total into business use e.g., company cars, grey fleet, site vehicles. This will allow for a more accurate reporting of emissions divided into their component Scopes 1, 2 and 3 sources under the DEFRA guidelines for company GHG reporting.
- For site electricity and gas usage, attempt to contact landlord for specific utility bills. This will increase the accuracy of these emission sources by replacing the CIBSE factors estimating consumption by total floor area to actual consumption.
- Associated Asphalt should consider expanding their assessment scope to include the emissions associated with the company's purchased materials in future assessment years.

5.2. Reducing emissions

To reduce GHG emissions, we recommend the following:

- Offset the calculated footprint by supporting change solutions around the world to obtain the 'Carbon Neutral Organisation' certification.
- When leasing/purchasing new vehicles, consider transitioning to electric vehicles (EV) alternatives where possible. Associated Asphalt should also continue to investigate other potential alternative fuel vehicles for the company's specialist vehicle fleet, including the potential hydrogen alternatives that it has already identified.
- Evaluate the effectiveness of using remote meetings and limited travel during COVID-19, and re-define what your business classifies as "essential" travel going forwards, encouraging the use of sustainable alternatives.
- Liaise with the landlord of each of your leased sites to consider switching to a renewable energy tariff, in order to reduce emissions associated with electricity usage. Many "green" electricity tariffs are now the same price as the traditional brown tariffs. Once you have done this you will be able to report your market-based emissions alongside your location-based.
- Conduct a site energy audit at the company's three controlled sites to identify potential areas for energy conservation across these locations.
- Consider Installing EV charging points at the company's sites. This will help to encourage and enable staff to switch to electric vehicle alternatives. Providing electric charging facilities demonstrates a strong position of leadership and action regarding your organisation's environmental policy and its carbon management plan to your staff, as well as helping to communicate that your business is actively working to reduce its current emissions to external stakeholders.

5.2.1. Setting carbon reduction budgets based on emissions

Having an agreed and defined system for investing in future carbon reduction activities helps drive carbon reduction and cost savings in a business. Many leading organisations are doing this through setting an "Internal Carbon Tax" or an "Internal Carbon Price" within their organisation (see http://www.carbonfootprint.com/internal_carbon_pricing.html for more information).

We suggest starting by setting a price of £40-50 per tonne of CO_2e, in line with guidance provided by the Grantham Research Institute on Climate Change and the Environment[1]. You may wish to collect the "taxation" by each functional group (depending on their emissions), or simply account for this at the top-level company budgeting.

Table 10: Carbon price compared to energy and travel costs

Emissions Source	Electricity	Natural Gas	Car Miles	Flights
1 tonne CO_2e is equivalent to	3,950 kWh	5,450 kWh	3,625 miles	5,446 km
Cost to produce 1 tonne CO_2e	£511	£159	£1,631*	£524
£40-£50 carbon price represents	8-10%	25-31%	2-3%	8-10%

**Assumes a rate of 45p per mile*

We recommend allocating this defined budget to help both internal and external carbon reduction activities. For example, it could be split:

- 75% on internal carbon reduction measures
- 25% on external carbon offsetting activities

Investments in internal carbon reduction activities should be made based on the level of carbon savings and the associated cost savings. Good carbon reduction investments usually pay for themselves and give a return on investment to the business within 3 years. Carbon offsetting return on investment is primarily measured through access to tenders, brand enhancement and PR (use marketing return on investment techniques).

5.2.2. Funding opportunities

The following section provides details of current funding opportunities in the UK that may be applicable to Associated Asphalt in order to increase the percentage of electric/hybrid vehicles within the fleet.

Plug-in car & van grants & incentives:

Sales of all new non-zero emission road vehicles will be phased out by 2040 UK Government (2021)

- Cars and vans (under 3.5t): all new cars and vans required to have significant zero emissions capability from 2030 and 100% zero emissions at the tailpipe from 2035.
- Heavy Goods Vehicles (above 3.5t): sales of all new medium sized trucks (up to and including 26t) to be zero emissions from 2035, with the heaviest (>above 26t) zero emission by 2040*
- Powered two wheelers: all new motorcycle and scooters to be fully zero emissions at the tailpipe from 2035

This funding is provided in the form of grants issued by the UK Government, which go towards the purchase of a plug-in electric vehicle. The levels of funding are as follows:

- 35% of the cost of a van, up to a maximum of £6,000 (for large vans)
- 35% of the cost of a car, up to a maximum of £2,500 (for cars with a list price below £35,000)

This will help to reduce the company's vehicle travel emissions. Further details on which vehicles are eligible are available through this website: https://www.gov.uk/plug-in-car-van-grants

The following schemes incentivise all types of vehicle acquisitions, including for employee-owned vehicles:

- Leasing - There are significant tax incentives if you lease an electric vehicle under a company 'salary sacrifice' programme. This type of programme is increasingly used instead of old-style company car programmes. Lease costs are taken off an employee's gross salary. This means that the employee's tax burden (PAYE and NIC) is then reduced (by the lease costs). For fossil-fuelled cars, employees would still be hit with high Benefit in Kind (BIK) taxes that (in 2021) can be as high as 37% of the P11D value of the vehicle compared with 1% for full EVs. This makes the EV an exceptionally good candidate as a salary sacrifice option. More so for higher tax bracket earners.

- Company car - If you get a company car, you will also benefit again from the very low BIK (tax year 2021, full EVs BIK at 1%, compared with >150g/km CO2 car BIK at 37%) – reducing your tax burden. Full EVs also qualify for Enhanced Capital Allowances (EHA) – at time of writing permitting the business to 'write down' the full value of the vehicle within one year against profits and thus reduce corporate taxes.
- Buying an EV outright – Although, car leasing is increasingly popular, many people still wish to buy a car outright. For this, the UK incentivises purchase of EVs for cars with electric range of greater than 70 miles as April 2021 to up to £2500 for cars with a list price under £35,000.

Workplace Charging Scheme:

This funding is provided in the form of vouchers issued by the UK Government, which go towards the purchase of electric vehicle charging points.

The grant cap is set at a maximum of £350 (including VAT) per socket. Each company can apply for up to 40 sockets (across all sites).

For more information, refer to: https://www.gov.uk/guidance/workplace-charging-scheme-guidance-for-applicants

5.3. Carbon offsetting

Carbon offsetting is a great way to compensate for the emissions that you cannot reduce, by funding an equivalent carbon dioxide saving elsewhere.

We can provide both UK-based and international projects for you to support. The majority of projects focus on the development of renewable energy in developing countries, however there are others which have a greater focus on social benefits as well as environmental benefits. Further detail on the type and specific projects that we currently have in our portfolio can be provided on request or be found at: http://www.carbonfootprint.com/carbonoffsetprojects.html.

Example of Carbon Offsetting Projects:

Tree Planting in UK Schools

Avoided Deforestation in the Brazilian Amazon

Clean Water in Rwanda

5.4. Carbon Footprint Standard

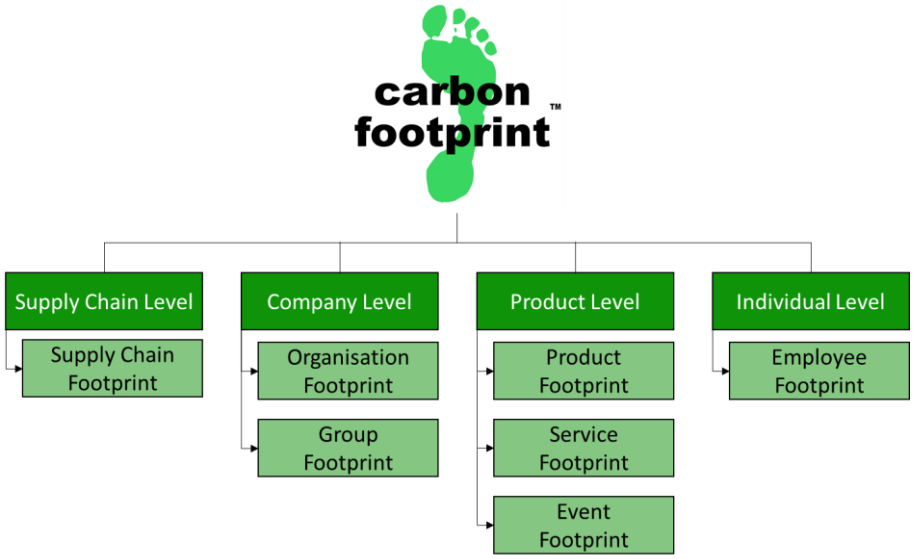
5.4.1. Brand endorsement

Associated Asphalt, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint. By achieving this Associated Asphalt 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.

The Carbon Footprint Standard is recognition of your organisation's commitment to carbon management. The text to the right-hand side of the logo demonstrates what level you have achieved in line with international best practice.

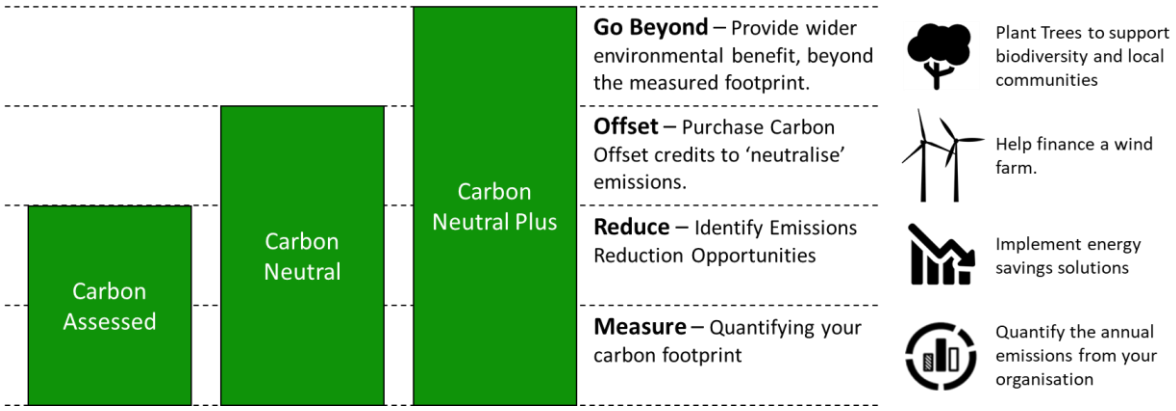
5.4.2. Scope

Over time, you can progress your carbon footprinting to increase the scope and encompass your products, supply chain and your employees. By doing so you will be able to receive the Carbon Footprint Standard for these categories, thus standing out amongst your competitors and truly driving the sustainability or your brand.



Once the scope has been identified, the Carbon Footprint Standard will allow Associated Asphalt to develop from a novice to an exemplar in the market. You can progress from a Carbon Assessed Organisation to a Carbon Neutral or a Carbon Neutral Plus Organisation by supporting a range of environmental projects that come with wider CSR and PR opportunities.

Alongside the sustainability rationale, this will allow you to leverage the Carbon Footprint Standard to truly stand out in your market. Progressing will resonate with like-minded customers and will help your business grow.



5.4.3. Communicate

Make sure you communicate your actions and achievements effectively, both within your organisation, to help develop your culture, and externally to help improve your brand image.

When promoting your actions, be sure to utilise all marketing channels available to you, such as website, newsletters, brochures, press releases, conferences/events, and social media etc.

You should:

- Explain why climate change matters to you (for more information visit: www.carbonfootprint.com/warming.html)
- Tell the story of where you have come from, the progress you have made and what your commitment is for the future (e.g., targets).
- Be clear and accurate about what you have achieved – take care not to exaggerate.
- Use the Carbon Footprint Standard branding, certificates, images of offset projects you are supporting and graphs of your carbon performance to help communicate your point in a clear and enticing manner.

6. References

1. Associated Issuing Bodies (AIB) *Residual Mix Factors* (2020)
2. BEIS GHG Conversion Factors for Company Reporting (2021)
3. Decarbonising transport: a better, greener Britain (publishing.service.gov.uk)
4. Guidelines to Defra's Greenhouse Gas (GHG) Conversion Factors for Company Reporting – annexes (June 2013)
5. HM Revenue & Customs (2019) https://www.gov.uk/government/publications/enhanced-capital-allowances.
6. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (March 2004)
7. UK Government (July 2021) UK Government's Decarbonising Transport Plan (July 2021)
8. United Nations (UN) Climate Transparency Report for International Emissions Factors (2019)
9. Grantham Research Institute on Climate Change and the Environment, 2019. *Policy Brief: How to price carbon to reach net-zero emissions in the UK.* Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2019/05/GRI-POLICY-BRIEF_How-to-price-carbon-to-reach-net-zero-emissions-in-the-UK.pdf
10. Quarterly energy prices December 2021 (publishing.service.gov.uk)

A. Annex A – Calculation Methodology (Additional Notes)

A.1 How is the carbon footprint calculated?

Carbon Footprint confirms that the methodology used to quantify the carbon footprint meets the following principles:

a) The subject and its boundaries have been clearly identified and documented.
b) The carbon footprint has been based on primary activity data unless the entity could not demonstrate that it was not practicable to do so, in which case an authoritative source of secondary data relevant to the subject was used.
c) The methodology employed minimised uncertainty and yielded accurate, consistent, and reproducible results.
d) Emission factors used are germane to the activity concerned and current at the time of quantification.
e) Conversion of non-CO_2 greenhouse gases to CO_2e has been based upon the 100-year Global Warming Potential figures published by the IPCC or national (Government) publication.
f) Carbon footprint calculations have been made exclusive of any purchases of carbon offsets.
g) All carbon footprints have been expressed as an absolute amount in tCO_2e.

A.2 Biomass

There are no CO_2 emissions from the combustion of biomass to be considered within this report.

A.3 Greenhouse gas removals

Within the calculation of Associated Asphalt's carbon footprint, there are no business processes resulting in the reduction of greenhouse gases from the atmosphere to be deducted from the calculation.

B. Annex B – Supplied Data and Emissions Breakdown

This Annex has been provided as a separate Excel file alongside the report on client request.

This annex shows the data that Associated Asphalt has supplied Carbon Footprint Ltd for the calculation of its emissions. At the end of each table one or several columns have been added that display the emissions and calculations associated for each item of data provided by Associated Asphalt. It should be noted that the latter has been calculated by Carbon Footprint Ltd, and not provided by Associated Asphalt.