Carbon Footprint Appraisal Report

Assessment Period:
1st April 2019 – 31st March 2020

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Executive Summary

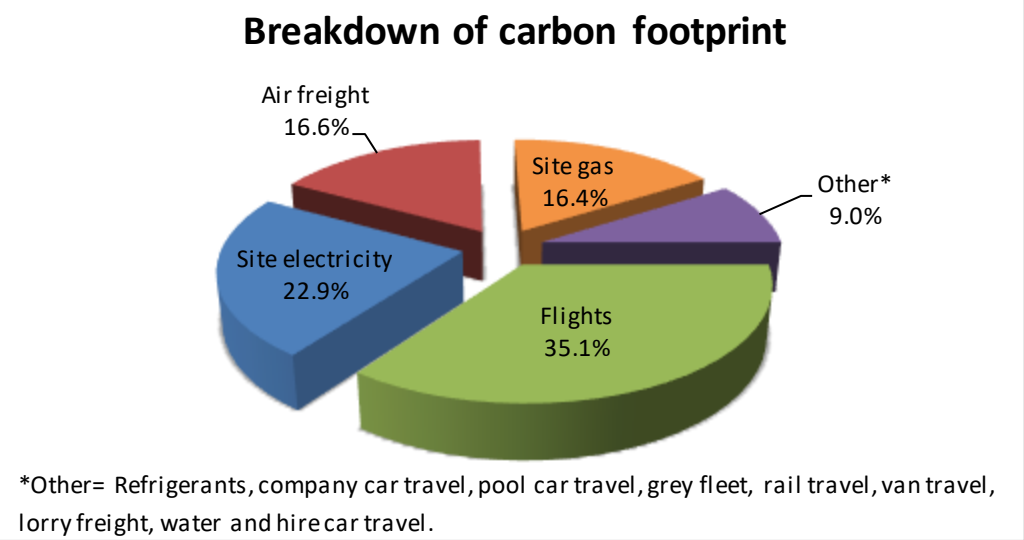
Carbon Footprint Ltd has assessed the greenhouse gas (GHG) emissions of EA Technology from 1st April 2019 to 31st March 2020, based on a dataset provided by the company.

Current Performance

- → Emissions have decreased 27.4% since the previous year.
- → Emissions decrease is predominately due to reduced business travel as the company increases the use of tele-conferencing devices.
- → The current estimated error margin is +/- 23.53%, based on the data provided.

Recommendations

- → Continue to offset your emissions to remain a Carbon Neutral Organisation.
- → Continue to review the current business travel policy to further encourage the adoption of more sustainable practices even once COVID-19 travel restrictions are lifted.
- → Avoid unnecessary air travel by increasing the availability and encouraging the use of remote meeting facilities.
- → Consider expanding the assessment scope to include all overseas offices.
- → **Set reduction targets based on intensity metrics (e.g. emissions per employee and/or per £M turnover), when updating your environmental policy.** Consider implementing carbon taxation within the business – as a means to manage use across divisions and to fund internal and external carbon reduction strategies.



*Other= Refrigerants, company car travel, pool car travel, grey fleet, rail travel, van travel, lorry freight, water and hire car travel.

	2018/19	2019/2020	% change from previous year
Total Tonnes CO_2e	736.07[1]	534.77	-27.35%
Tonnes of CO_2e per employee	4.21	2.81	-33.08%
Tonnes of CO_2e per £M turnover	24.05	17.83	-25.86%

[1] Air freight was recalculated with updated data modelled on the data provided for 2019/20

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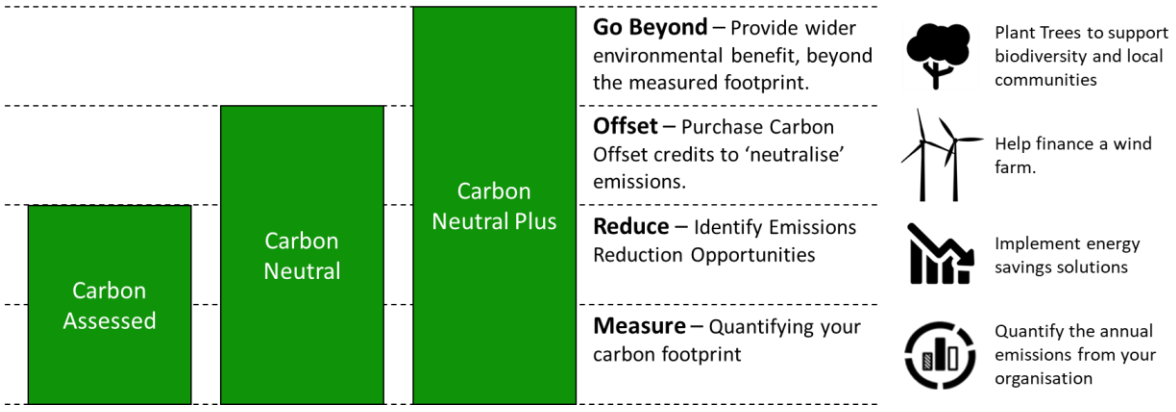
Commercial in Confidence

To remain an exemplar in the market, **EA Technology should continue to offset its emissions to remain certified as a carbon neutral organisation**. Over the past three years, EA Technology has planted a total of 1,923 trees in the UK and has funded the protection of the Brazilian Amazon Rainforest by supporting our reduced deforestation and forest degradation project. Afforestation and forest protection are fantastic environmental projects, as they help to sequester carbon, provide valuable new habitats for local biodiversity and protect existing habitats.

By continuing to offset emissions, EA Technology will continue to help combat the global climate crisis as well as gain fantastic marketing and PR opportunities.



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Quality Control

Report issue number:	1.0
Date:	10 July 2020
Calculations completed by:	Jenny Webb
Calculations reviewed by:	Georgina Whitlock
Report produced by:	Jenny Webb
Report reviewed by:	Georgina Whitlock
Director approval:	Dr. Wendy Buckley

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1. Introduction

1.1. EA Technology's carbon management journey

EA Technology specialises in asset management solutions, with offices located around the world. The organisation regularly transports products globally via lorry and air freight.

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

Measure Aim Reduce Offset Communicate Comply

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.

1.2. 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 scopes 1, 2 and 3 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
	Consumption of purchased electricity, heat steam and cooling	2
	Employee business travel (using transport not owned by the company)	3

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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 scope 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	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.

1.3. Why is it important?

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 of inaction will be disasterous. 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. It will also affect human health, accelerate species extinction, and disrupt many ecosystems.

Climate change is a global threat which will impact the lives of everyone on the planet. Hence, 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 EA Technology to continue doing its bit by monitoring, reducing and offsetting its emissions.

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1.4. BS ISO 14064-1:2018

This GHG report has been prepared in accordance with Part 1 of BS 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.

1.5. 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 EA Technology's footprint using the 2019 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.

Additional methodology information is presented in Annex A.

1.6. Data supplied for the carbon footprint appraisal

A summary of the data supplied by EA Technology for the appraisal is presented in Annex B.

1.7. Abbreviations

A/C	Air Conditioning
BEIS	Department for Business Energy & Industrial Strategy
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organisation
km	Kilometres
kWh	Kilowatt Hours
PR	Public Relations
UN	United Nations

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2. Calculation Scope and Accuracy

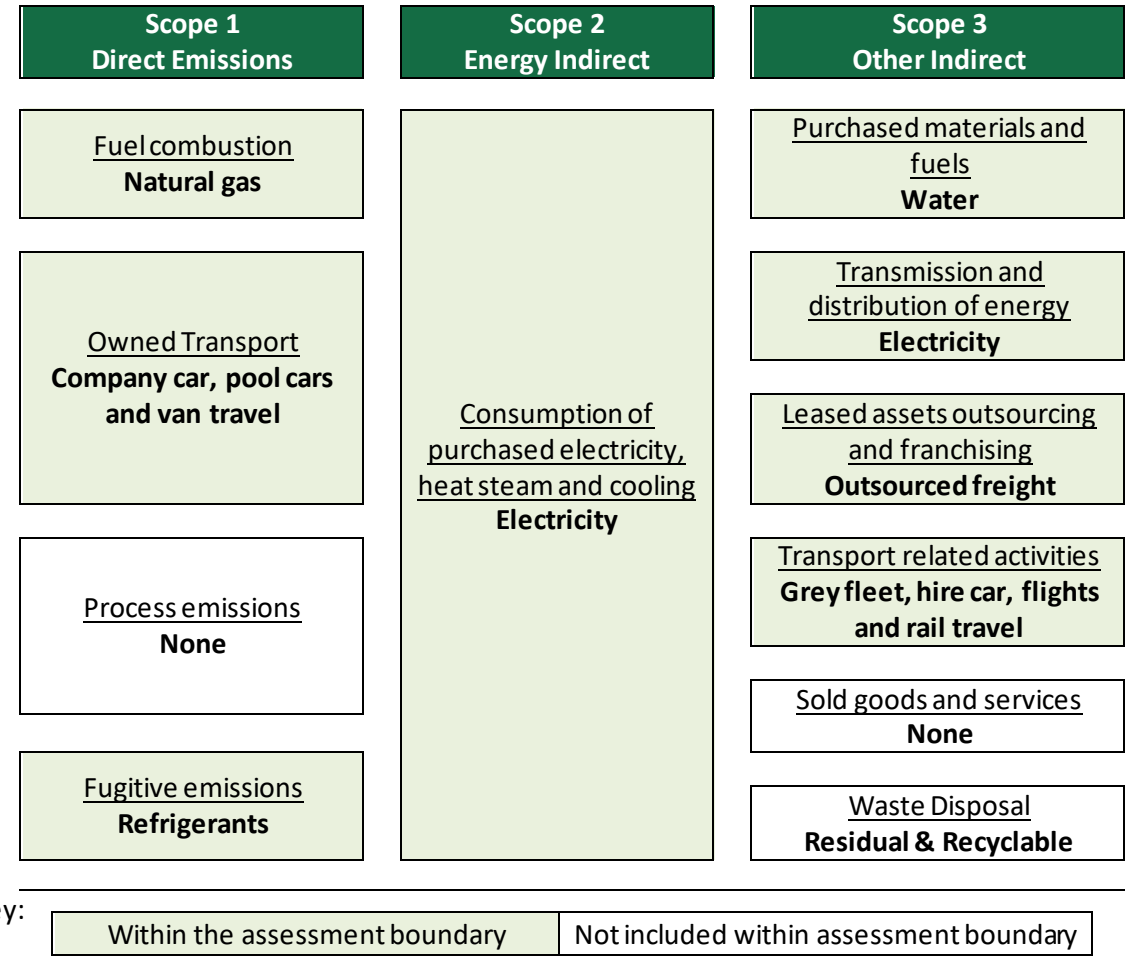
2.1. Scope of this work

Carbon Footprint has assessed the GHG emissions from 1st April 2019 to 31st March 2020 resulting from the energy consumption at EA Technology's facilities and its business transport activities.

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. *This assessment covers UK operations only.* 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.

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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 EA Technology (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	Source of data and comments	Accuracy	Materiality	Estimated Error (%)	Estimated Error Margin (tCO_2e)
Site electricity	Meter readings and utility bills	Good	High (>20%)	0.10%	12.27
Flights	The total mileage for domestic, short-haul and long-haul flights were provided by EA Technology's external travel provider. All flights were calculated in the 'Unknown' cabin class emission factor.	Average	High (>20%)	0.50%	93.72
Air freight	Cargo weights per shipment, number of shipments and departure/destination location were provided by the company's dispatch logs. Where only a country location was provided, rather than city or airport name, the destination airport was assumed to be either in the capital city or the busiest airport of the area.	Good	Medium (5-20%)	0.10%	8.89
Site gas	Meter readings and utility bills	Good	Medium (5-20%)	0.10%	8.77
Rail travel	The total mileage travelled by train was provided by the company's external travel provider.	Excellent	Low (1-5%)	0.01%	0.08
Van travel	Vehicle details and mileage data were sourced from odometer readings	Excellent	Low (1-5%)	0.01%	0.14
Water (and wastewater)	Water meter readings and bills.	Good	Low (1-5%)	0.10%	0.72
Hire car travel	Total mileage was provided from internal records. Assumed all vehicles were petrol.	Good	Low (1-5%)	0.10%	1.07
Refrigeration & A/C	Top-up quantities were provided from internal air conditioning service reports.	Excellent	Very Low (<1%)	0.01%	0.02

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Dataset	Source of data and comments	Accuracy	Materiality	Estimated Error (%)	Estimated Error Margin (tCO_2e)
Company car travel	Vehicle details and mileage data were sourced from odometer readings and mileage claims	Excellent	Very Low (<1%)	0.01%	0.01
Pool car travel	Vehicle details and mileage data were sourced from odometer readings	Excellent	Very Low (<1%)	0.01%	0.04
Employee owned car travel (grey fleet)	Total mileage for the data period was provided from expenses and mileage claims. It was assumed all vehicles are petrol.	Good	Very Low (<1%)	0.10%	0.10
Lorry freight (outsourced)	Mileage was calculated using the distance the Manchester City Airport along with the number if trips.	Good	Very Low (<1%)	0.10%	0.01
Total				**+/- 23.53%**	

To improve accuracy for future assessments, please see recommendations provided in Section 5.

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3. Carbon Footprint Results

3.1. Summary of results

The total carbon footprint for EA Technology for the period ending 31st March 2020 was 534.77 tonnes CO_2e. The following table and graphs provide a summary of results for EA Technology's carbon footprint calculation by scope and source activity.

Table 4: Results of EA Technology's carbon footprint assessment by scope and source activity

Scope	Activity	Tonnes CO_2e
Scope 1	Site gas	87.68
	Van travel and distribution	14.09
	Pool car travel	4.14
	Refrigeration & A/C	1.77
	Company car travel	0.87
Scope 1 Sub Total		**108.55**
Scope 2	Electricity generation	113.06
Scope 2 Sub total		**113.06**
Scope 3	Flights	187.44
	Air freight	88.94
	Hire car travel	10.70
	Electricity transmission & distribution	9.60
	Rail travel	8.26
	Water (and wastewater)	7.18
	Employee owned car travel (grey fleet)	0.96
	Lorry freight (outsourced)	0.06
Scope 3 Sub Total		**313.14**
Total Tonnes of CO_2e		**534.77**
Tonnes of CO_2e per employee		**2.81**
Tonnes of CO_2e per £M turnover		**17.83**

Figures 2 and 3 show the breakdown of the total GHG emissions produced by EA Technology; 35.1% of the total emissions is produced through air travel. The other two significant factors are electricity consumption and air freight, contributing to 22.9% and 16.4% of the total emissions respectively.

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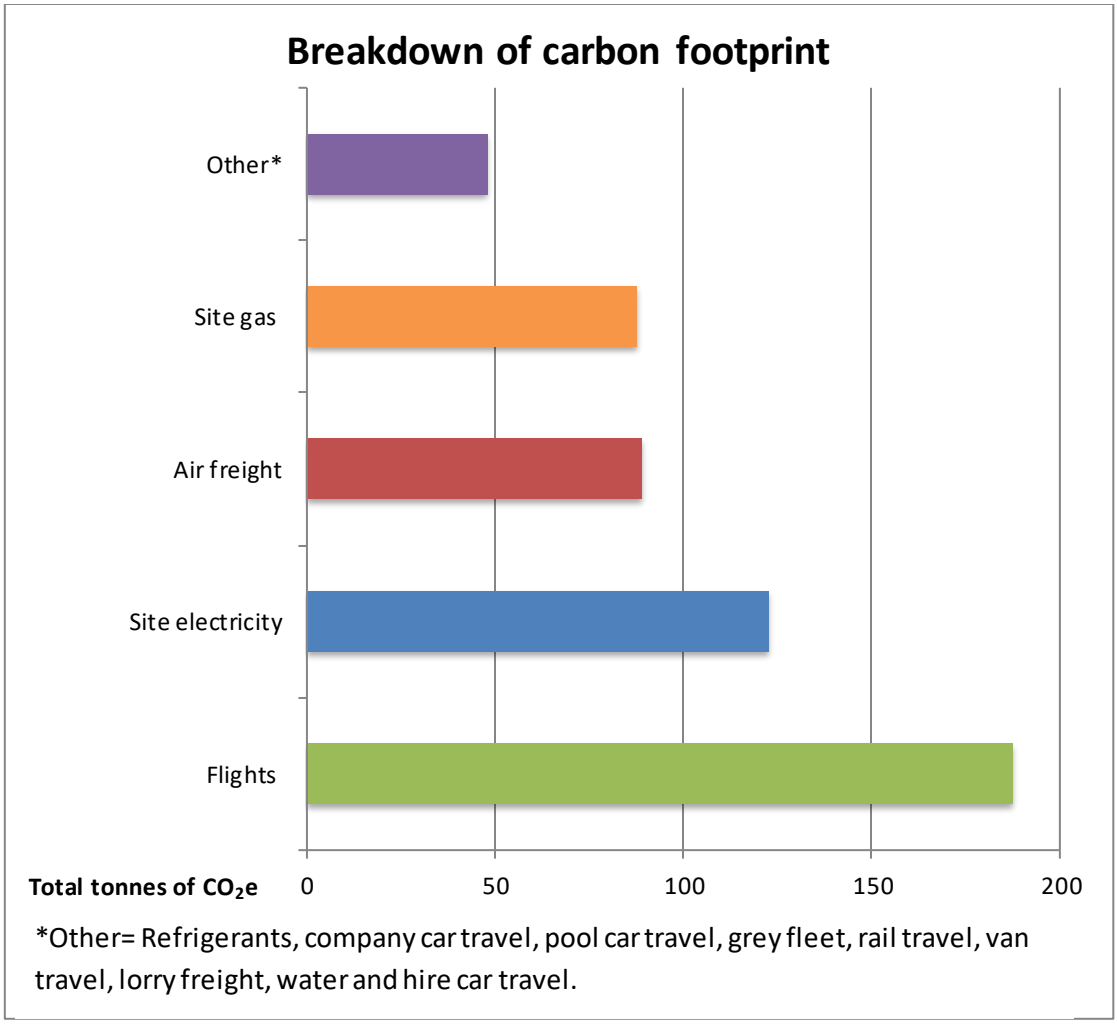

Figure 2: Contribution in tonnes of CO_2e of each element of EA Technology's carbon footprint

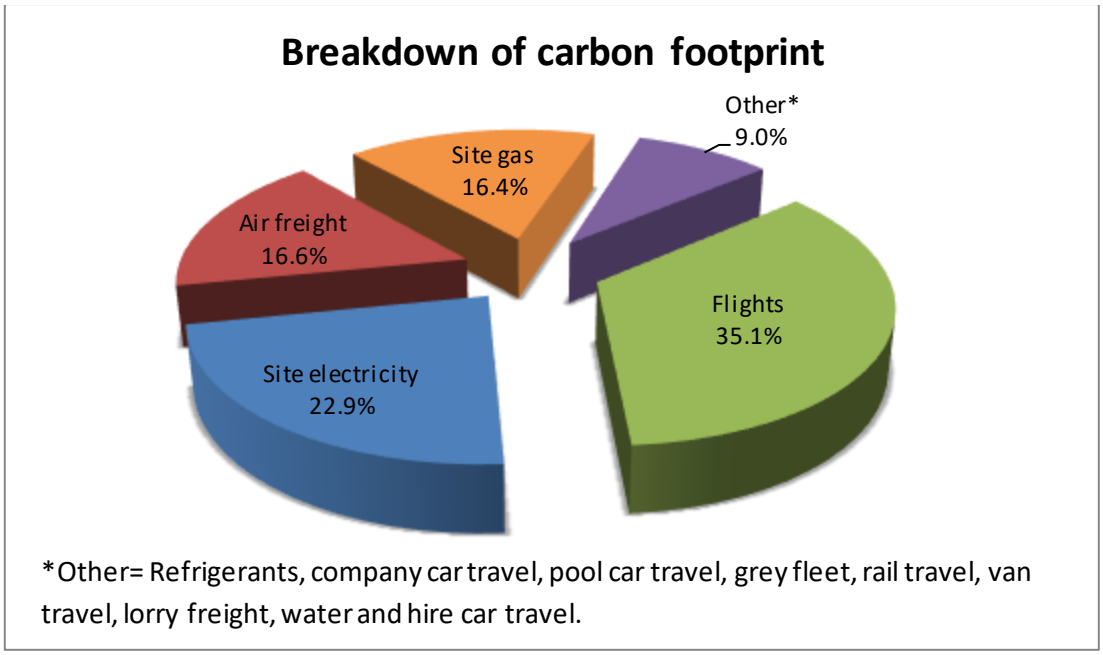

Figure 3: Percentage contribution of each element of EA Technology's carbon footprint

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3.2. Emissions from energy usage at site facilities

EA Technology operates within three units in the UK, each located in Capenhurst. The majority of employees (76.3%) are based within Unit 4 (Table 5).

As expected, Unit 4 is the site which produces the highest amount of site emissions, whilst Unit 6 produces the lowest amount (Table 5 and Figure 4).

When comparing the emissions per employee, Unit 7 is the site with the highest tCO_2e/employee ratio, whilst Unit 6 presents the lowest ratio.

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

Site	No. of employees	Electricity tCO_2e	Gas tCO_2e	Total tCO_2e	Tonnes of CO_2e per employee
Unit 4	145	75.93	81.71	157.64	1.09
Unit 7	30	37.05	-	37.05	1.23
Unit 6	15	9.69	5.98	15.66	1.04
Total/Average	**190**	**122.66**	**87.68**	**210.35**	**1.11**

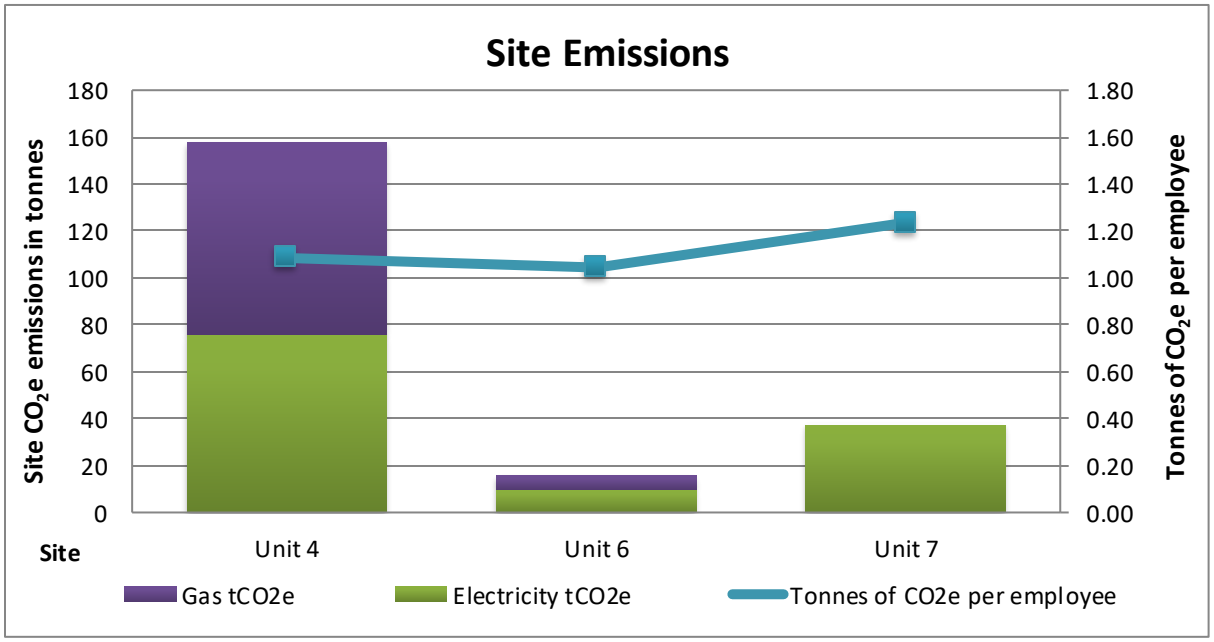

Figure 4: CO_2e emissions on a per site and employee basis

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3.3. Emissions from travel

The next graph and table show the GHG emissions resulting from business travel. It can be seen that the largest contributor is air travel, accounting for 82.8% of the total transport emissions.

EA Technology operates four electric vehicles and five hybrid electric vehicles within its owned vehide fleet, several of which are unallocated and used as pool cars. The type of vehicle and CO_2 emissions rating of the hire vehicles used throughout the year is unknown. **I recommend EA Technology implements a policy stating a maximum vehicle emissions rating (e.g. 110 gCO_2/km) that is allowed when hiring vehicles.**

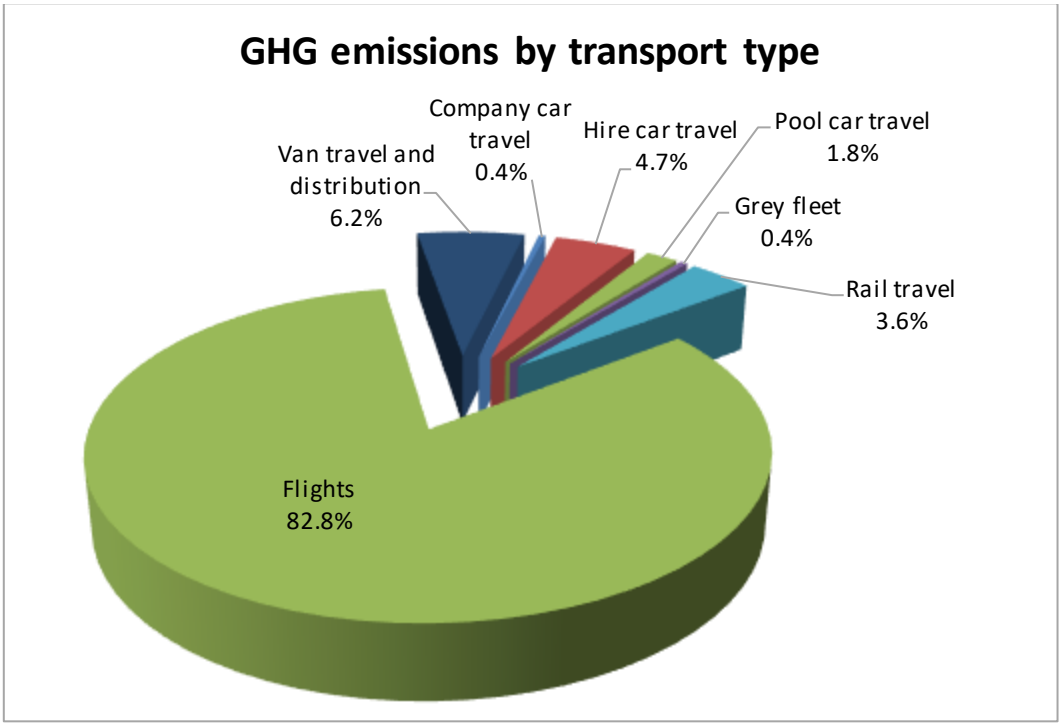

Figure 5: Percentage contribution of each element to transportation emissions

Table 6: CO_2e emissions due to transportation

Type of Travel / Transport	Tonnes of CO_2e
Flights	187.44
Van travel and distribution	14.09
Hire car travel	10.70
Rail travel	8.26
Pool car travel	4.14
Employee owned car travel (grey fleet)	0.96
Company car travel	0.87
Total	**226.47**

The detailed results are given in Annex B.

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3.4. Emissions from outsourced freight

EA Technology utilises outsourced freight via lorries in order to transport products to a local warehouse and to Manchester City airport. The products are then air freighted from Manchester predominantly to either China or Singapore.

As well as transporting over larger distances, air freight is very carbon-intensive compared to other modes of distribution, which is why it accounts for the majority of freight GHG emissions (Figure 6 & Table 7). **I recommend EA Technology investigates the potential to switch some deliveries to other modes such as sea and rail, as these are far less carbon-intensive, producing only 1-3% of the emissions air freight does.**

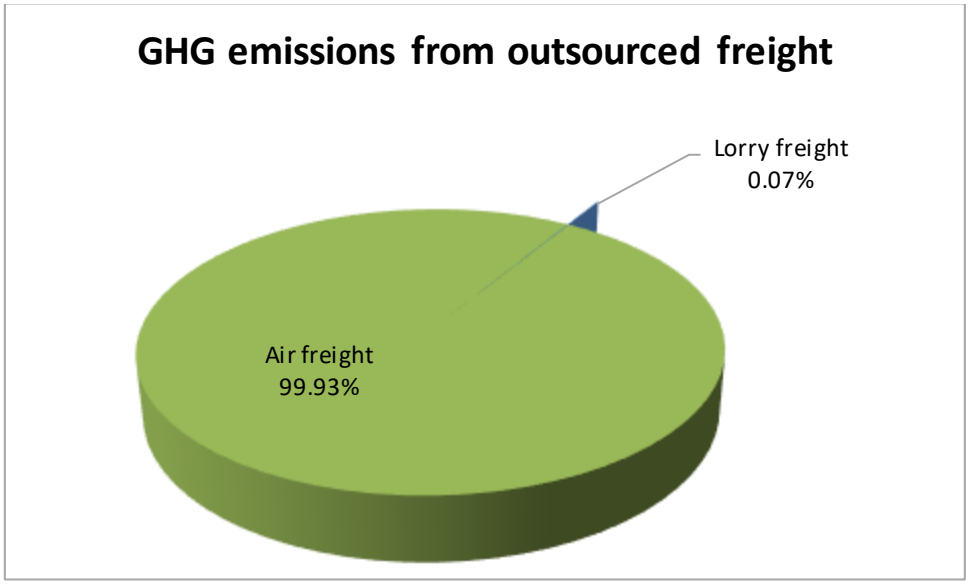

Figure 6: Emissions breakdown from outsourced freight transportation

Table 7: CO_2e emissions from outsourced freight

Freight Transport Type	Tonnes of CO_2e
Air freight	88.94
Lorry freight (outsourced)	0.06
Grand Total	**89.00**

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3.5. Emissions from refrigerants

The emissions arising as a result of air-conditioning systems at EA Technology's facilities is shown below in Table 8.

Table 8: CO_2e emissions as a result of on-site refrigerant gas replenishment

Location	Amount Refilled (kg)	Refrigerant type	Emissions (tCO_2e)
Capenhurst	1.00	R407C	1.77

3.6. Emissions from water (and wastewater)

Table 9 shows the emissions arising from water consumption at EA Technology's facilities. It can be seen that Unit 4 accounts for the highest consumption, and therefore emissions, at 71.4% of the total (Figure 7).

Table 9: CO_2e emissions as a result of on-site water consumption

Site	Water supply (m^3)	Estimated wastewater %	Total emissions (tCO_2e)
Unit 4 meter 1 (C1)	3,937	100%	4.14
Unit 7	1,125	100%	1.18
Unit 4 meter 2 (C45)	936	100%	0.98
Unit 6	829	100%	0.87
Total	**6,827**		**7.18**

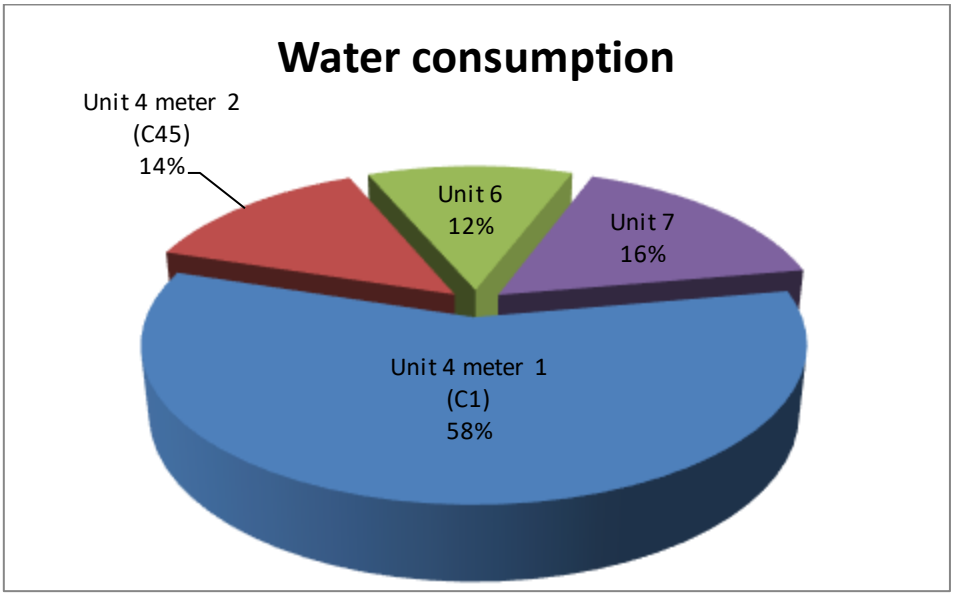

Figure 7: Breakdown of water consumption by site

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4. Comparison and Benchmarking

4.1. Comparison to base year emissions

The baseline year (2018/19) was re-calculated as there were some air freight journeys missing. The level of accuracy for the 2019/20 air freight data was higher, so it was used as proxy to account for the missing 2018/19 data. The updated baseline year results are provided in the table below.

The table and graph below show historical emissions per activity, as well as EA Technology's total carbon footprint and carbon intensity metrics (tonnes of CO_2e per employee and tonnes of CO_2e per £M turnover).

Table 10: EA Technology's carbon footprint comparison and percentage change

Element	Data Period		% change on previous year
	2018/19	2019/20	
Flights	410.62	187.44	-54.35%
Site electricity	128.01	122.66	-4.18%
Air freight	54.39[2]	88.94	+63.52%
Site gas	81.78	87.68	+7.22%
Van travel and distribution	10.56	14.09	+33.43%
Hire car travel	14.66	10.70	-27.01%
Rail travel	9.79	8.26	-15.60%
Water (and wastewater)	5.23	7.18	+37.32%
Pool car travel	7.94	4.14	-47.86%
Refrigeration & A/C	-	1.77	n/a
Employee owned car travel (grey fleet)	9.90	0.96	-90.28%
Company car travel	3.01	0.87	-71.03%
Lorry freight (outsourced)	0.16	0.06	-60.76%
Total Tonnes of CO_2e	**736.07**	**534.77**	**-27.35%**
Tonnes of CO_2e per employee	**4.21**	**2.81**	**-33.08%**
Tonnes of CO_2e per £M turnover	**24.05**	**17.83**	**-25.86%**

EA Technology has decreased its total carbon footprint by 27.35% between this period and the baseline year. This is a fantastic achievement, that has primarily been reached with reduced air travel (54.4%). Throughout the data period EA Technology has made a conscious effort to reduce travelling wherever possible (by both air and company car) and have increased the use of tele-conferencing devices whenever feasible. Emissions from air freight has increased by 63.5% since the previous year, which is due to gathering improved data from the company's internal despatch department, and more trips to China and Singapore.

As air travel continues to be a significant element of EA Technology's carbon footprint, I recommend continuing to encourage the use of tele-conferencing technologies wherever possible to further reduce business travel emissions.

[2] Updated with 2020 data as it was found that data was missing

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Site emissions:

Electricity consumption has increased by 25,636 kWh (6.15%) since the baseline year, mainly from Unit 4 (a 22,140 kWh increase). However, emissions from electricity have decreased overall due to the de-carbonisation of the UK's national grid, as more electricity is generated from low-carbon/renewable sources.

Gas consumption has also increased by a total of 32,377 kWh (7.28%), which is responsible for the increased emissions. Water consumption on site has increased by 37.34% and is currently undergoing investigation to identify any possible leaks.

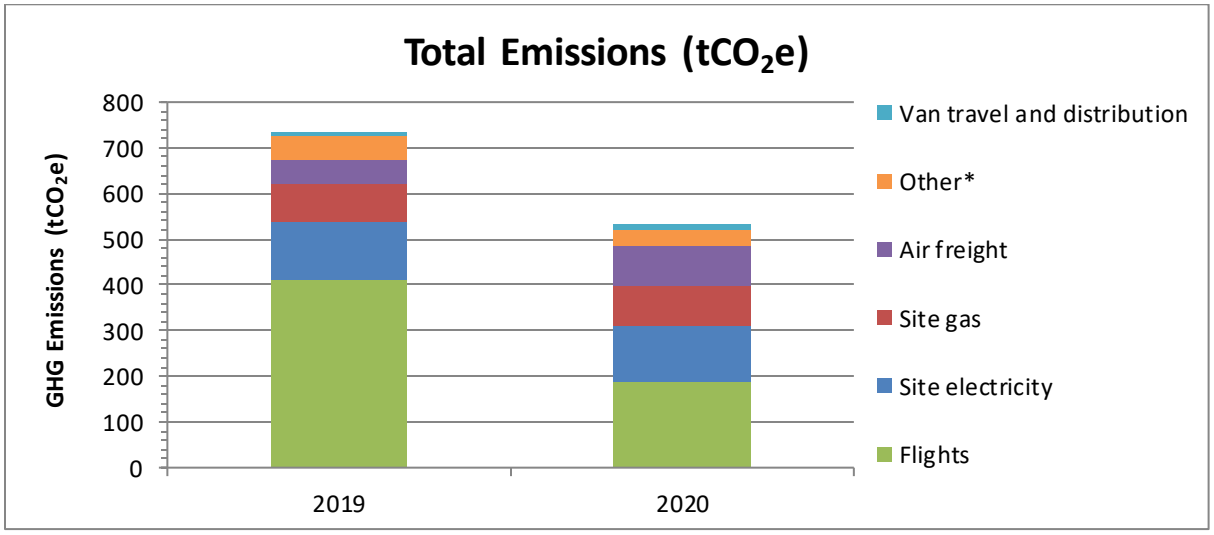

Figure 8: Detailed emissions comparison for the various aspects of EA Technology's emissions

Benchmarked against employee numbers and company turnover (adjusted for inflation) the carbon emissions statistics show a clear decrease in both intensity metrics since the previous assessment.

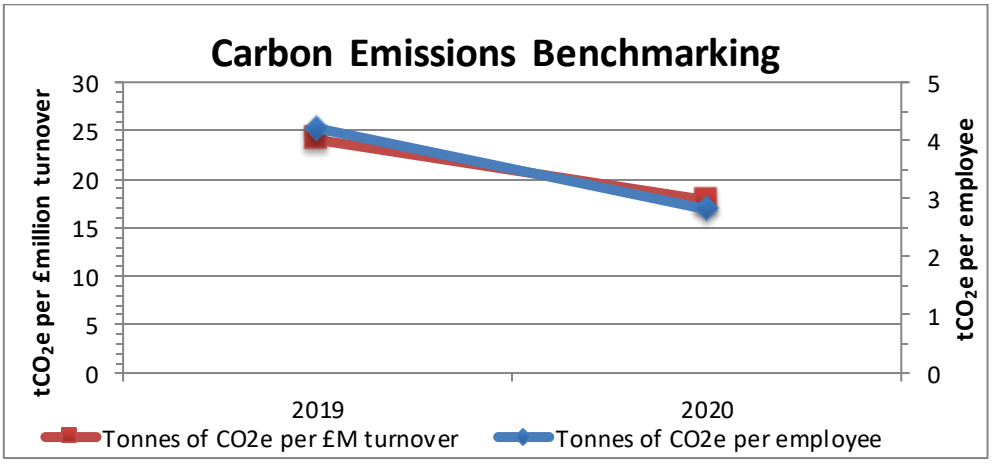

Figure 9: Carbon footprint of EA Technology for internal benchmarks

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.

4.2. External benchmarking

Table 11 shows the benchmarked scope 1 and 2 emissions for EA Technology. These benchmarked results can be used to track emissions over time whilst accounting for business growth.

Table 11: EA Technology's benchmarked GHG emissions

Year/Element	2019/20
Turnover in £million	30.00
Total number of employees	190
Tonnes of CO_2e	534.77
Tonnes of CO_2e per £ million	17.83
Tonnes of CO_2e per employee	2.81
Scope 1 & 2 Emissions	
Scope 1 & 2 tonnes CO_2e	217.48
Scope 1 & 2 tonnes CO_2e per employee	1.14
Scope 1 & 2 tonnes CO_2e per £ million	7.25

Note: Carbon Footprint Ltd also offers a specialist sustainability competitor assessment service. Please ask if you would like us to provide a more detailed comparison of your sustainability credentials / performance alongside a selection of your key competitors/peers.

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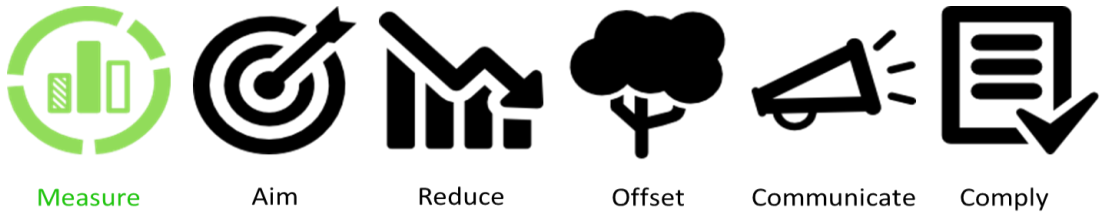
5. Key Recommendations

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

I recommend EA Technology set internal carbon reduction targets based on intensity metrics (e.g. emissions per employee or per £M turnover), as this will take into account business growth and development. Targets should be regularly reviewed internally to account for any changes to the business, make more challenging if achieved too early etc.

5.1.2. Improving the accuracy of future carbon footprint assessments

The estimated overall error margin is +/- 23.53%. To improve the accuracy of future assessments, we recommend the following:

- Provide vehicle details and fuel type for grey fleet vehicles, in addition to the mileage. Investigate whether this information can be requested through the expenses system.
- Provide a breakdown of air travel including individual flight paths and cabin class.
- Provide details of destination airports for air freight (rather than the country).
- Provide utility bills as evidence of consumption.

5.2. Reducing emissions

To reduce GHG emissions, we recommend the following:

- Evaluate the effectiveness of using remote meetings and limited travel, and re-define what your business classifies as “essential” travel.
- Encourage employees to travel by public transport rather than by cars whenever possible, once the threat of COVID-19 has been eliminated.
- Investigate opportunities to shift air and road shipments to sea and rail. Sea and rail freight produce only 1-3% of the emissions air freight produces per tonne.km travelled.
- Investigate opportunities with the building to switch onto a renewable energy tariff.
- Implement a policy stating a maximum vehicle emissions rating (e.g. 110 gCO_2/km) that is allowed when hiring vehicles.

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 £20-25 per tonne of CO_2e, as this typically relates to 1-6% of the cost of causing emissions (as shown in the table below). 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 12: Carbon price compared to energy and travel costs

Emissions Source	Electricity	Natural Gas	Car Miles	Flights
1 tonne CO_2e is equivalent to	2400 kWh	5500 kWh	3300 miles	5200 km
Cost to produce 1 tonne CO_2e	£335	£220	£1485*	£400
£20 carbon price represents	6%	9%	1%	5%

**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).

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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.

The cost of offsetting has reduced considerably over recent times. As a budgetary indication, your full emissions footprint can be offset from **£1,873 (i.e. £3.50 per tonne).**

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

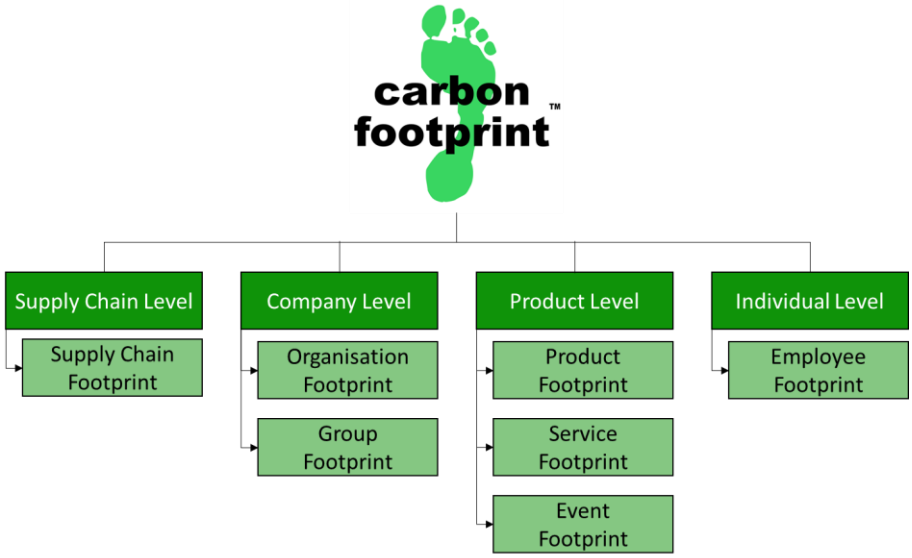
5.4.1. Brand endorsement

EA Technology, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint and shown a reduction of 27.3% based on its absolute emissions. By achieving this EA Technology 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

As you are at the beginning of your Carbon Footprint Journey, you have decided to focus on the carbon footprint at the organisational level. This is a great start. 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.



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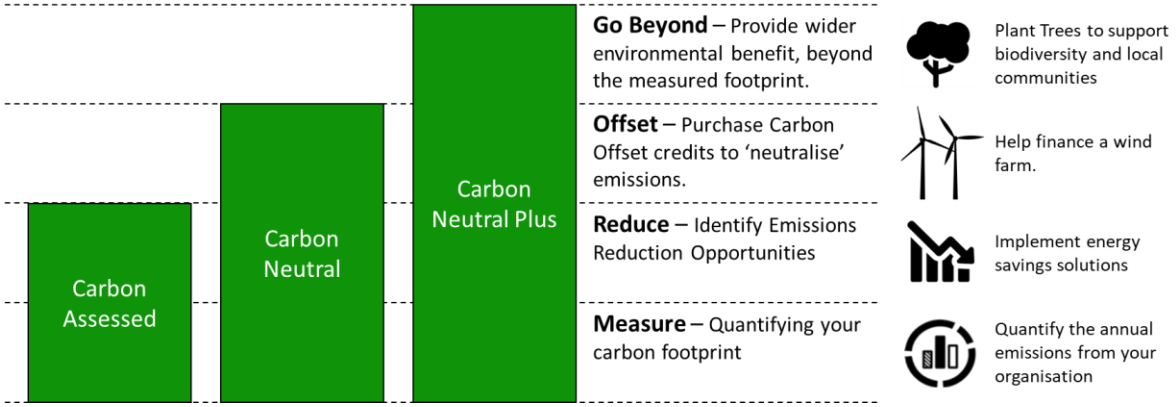
Once the scope has been identified, the Carbon Footprint Standard will allow EA Technology to develop from a novice to an exemplar in the market. You can progress from a Carbon Assessed Organisation to a Carbon Neutral or a Carbon Neutral Plus Organisation by supporting a range of environmental projects 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.

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6. References

1. BEIS GHG Conversion Factors for Company Reporting (July 2019)
2. Guidelines to Defra's Greenhouse Gas (GHG) Conversion Factors for Company Reporting – annexes (June 2013)
3. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (March 2004)

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

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B. Annex B – Supplied Data and Emissions Breakdown

This annex shows the data that EA Technology 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 EA Technology. It should be noted that the latter has been calculated by Carbon Footprint Ltd, and not provided by EA Technology.

B.1 Data used for Scope 1 emissions assessment

This section contains the data related to the direct emissions attributable to EA Technology. These include the energy usage in EA Technology's buildings (excluding purchased electricity, since this corresponds to Scope 2, indirect emissions), any company owned vehicle transport and any of the other six greenhouse gases produced.

Table 13: Data supplied and emissions breakdown for energy usage

Site Name	No. of staff	Natural Gas (kWh)	Country	Natural Gas (tCO_2e)
Unit 4	145	444,433	United Kingdom	81.71
Unit 6	15	32,500	United Kingdom	5.98
Total	**190**	**476,933**		**87.68**

Table 14: Data supplied and emissions breakdown for company owned van transportation

Registration Plate	Make	Model	Engine Size (cc)	Fuel Type	Travel Distance (mile)	Van Type	Emissions (tCO_2e)
BT17 CWV	Ford	Transit Custom	1,995	Diesel (retail)	8,551	Average van (<3.5t)	3.46
PY17 FDC	Ford	Transit Connect	1,499	Diesel (retail)	14,769	Average van (<3.5t)	5.98
EJ17 NHT	Ford	Transit Custom	1,995	Diesel (retail)	11,475	Average van (<3.5t)	4.65
Total					**34,795**		**14.09**

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Table 15: Data supplied and emissions breakdown for company owned car transportation

Registration Plate	Make	Model	Engine Size (cc)	Fuel Type	Emissions Rating (gCO_2/km)	Annual Distance (mile)	Car Type	Emissions (tCO_2e)
MM68 HJX	Jaguar	I space		Electric	0	2,000	Average Unknown Fuel	0.00
EF18 UHG	Nissan	Leaf		Electric	0	500	Average Unknown Fuel	0.00
EF18 HRC	Nissan	Leaf		Electric	0	500	Average Unknown Fuel	0.00
DE68 KGZ	Toyota	Prius	1798	Petrol (retail)	28	8,000	Average petrol hybrid car	0.43
DK69 LOD	Volvo	V90 T8		Petrol (retail)	43	1,250	Average petrol hybrid car	0.10
CY65 CCF	Land rover	Discovery	1999	Diesel (retail)	139	1,250	Medium Diesel (1.7l-2.0l)	0.34
Total						**13,500**		**0.87**

Table 16: Data supplied and emissions breakdown for refrigerant gas replenishment

Amount Refilled (kg)	Refrigerant type	GWP ($kgCO_2e$)	Emissions (tCO_2e)
1	R407C	1774.00	1.77

Table 17: Data supplied and emissions breakdown for pool cars

Registration Plate	Make	Model	Engine Size (cc)	Fuel Type	Emissions Rating (gCO_2/km)	Annual Distance (mile)	Car Type	Emissions (tCO_2e)
DA18ZTT	Toyota	Prius	1,798	Petrol (retail)	82	3,000	Medium petrol hybrid car	0.48
DE18 XJM	Lexus	NX	2,494	Petrol (retail)	121	500	Medium petrol hybrid car	0.12
KJ16 TPV	Mercedes	204K	2,143	Petrol (retail)	99	18,582	Medium petrol hybrid car	3.55
DC14 KKM	Nissan	Leaf		Electric	0	500	Electric	0.00
Total						**22,582**		**4.14**

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B.2 Data used for Scope 2 emissions assessment

This section contains the data associated to the energy indirect emissions attributable to EA Technology. The table below shows the purchased electricity, heat or steam usage in EA Technology's buildings.

Table 18: Data supplied and emissions breakdown for purchased electricity usage

Site Name	No. of staff	Grid Electricity (kWh)	Country	Electricity Generation (tCO_2e)
Unit 4	145	273,828	United Kingdom	69.99
Unit 6	15	34,927	United Kingdom	8.93
Unit 7	30	133,596	United Kingdom	34.15
Total	**190**	**442,351**		**113.06**

B.3 Data used for Scope 3 emissions assessment

The tables below demonstrate the company's employee business travel (not including staff commuting), any outsourced transport, and emissions from the transmission and distribution of purchased energy.

Table 19: Data supplied and emissions breakdown for staff business travel by employee owned car

Registration Plate	Fuel Type	Annual Distance (mile)	Car Type	Emissions (tCO_2e)
Various	Petrol (retail)	3,306	Average Petrol	0.96

Table 20: Data supplied and emissions breakdown for staff business travel by hire car

Registration Plate	Fuel Type	Annual Distance (mile)	Car Type	Emissions (tCO_2e)
All vehicles	Petrol (retail)	37,544.0	Average Unknown Fuel	10.70

Table 21: Data supplied and emissions breakdown for staff business travel by train

Train Type	No. of Passenger Trips	Distance (km)	Emissions (tCO_2e)
National rail	1	200,797.9	8.26

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Table 22: Data supplied and emissions breakdown for staff business flights

Type of travel	No. of passenger trips	Type	Return Trip?	Passenger km	Total Emissions (tCO_2e)
Domestic	22	Unknown	Yes	10,424	2.66
European	71	Unknown	Yes	85,385	13.52
International	75	Unknown	Yes	875,493	171.26
Total	**168**			**971,302**	**187.44**

Table 23: Data supplied and emissions breakdown for outsourced lorry transportation

Registration Plate	No. of Trips	Type of Lorry	Travel Distance (Trip / Annual)	Cargo Weight (kg)	tCO_2e
Unknown	502	All rigids (UK average)	6.00	44.00	0.05
Unknown	26	All rigids (UK average)	43.00	44.00	0.02
Total	**528**		**49.00**	**88.00**	**0.06**

Table 24: Data supplied and emissions breakdown for outsourced van transportation

Registration Plate	Make	Model	Engine Size (cc)	Fuel Type	Travel Distance (mile)	Van Type	Emissions (tCO_2e)
BT17 CWV	Ford	Transit Custom	1,995	Diesel (retail)	8,551	Average van (<3.5t)	3.46
PY17 FDC	Ford	Transit Connect	1,499	Diesel (retail)	14,769	Average van (<3.5t)	5.98
EJ17 NHT	Ford	Transit Custom	1,995	Diesel (retail)	11,475	Average van (<3.5t)	4.65
Total					**34,795**		**14.09**

Table 25: Data supplied and emissions breakdown for the transmission and distribution of purchased electricity.

Site Name	No. of staff	Grid Electricity (kWh)	Country	Electricity Transmission & Distribution (tCO_2e)
Unit 4	145	273,828	United Kingdom	5.94
Unit 6	15	34,927	United Kingdom	0.76
Unit 7	30	133,596	United Kingdom	2.90
Total	**190**	**442,351**		**9.60**

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Table 26: Data supplied and emissions breakdown for outsourced air transportation

No. Of Shipments	Type	Departure Airport Code	Destination location	Assumed Destination Airport Code	Weight per shipment (kg)	Departure Location	Destination Location	Distance (km)	Emissions (tCO_2e)
17	International	MAN	United Arab Emirates	AUH	16	Manchester	Abu Dhabi	5678.28	1.75
28	International	MAN	China	PEK	70	Manchester	Beijing	8091.97	17.95
18	International	MAN	Hong Kong	HKG	26	Manchester	Hong Kong	9619.57	5.10
1	International	MAN	India	DEL	13	Manchester	Delhi	6815.79	0.10
11	International	MAN	South Korea	GMP	11	Manchester	Seoul	8783.88	1.20
13	International	MAN	New Zealand	AKL	8	Manchester	Auckland	18183.44	2.14
8	International	MAN	Saudi Arabia	RUH	36	Manchester	Riyadh	5123.02	1.67
58	International	MAN	Singapore	SIN	46	Manchester	Singapore	10955.63	33.08
19	International	MAN	USA	IAD	20	Manchester	Washington	5722.13	2.46
5	International	MAN	Vietnam	HAN	6	Manchester	Hanoi	9255.77	0.31
12	International	MAN	South Africa	JNB	9	Manchester	Johannesburg	9317.40	1.14
23	International	MAN	Australia	CBR	40	Manchester	Canberra	17021.94	17.72
17	International	MAN	Quatar	DOH	4	Manchester	Doha	5407.62	0.42
2	International	MAN	Malaysia	KUL	8	Manchester	Kuala Lumpur	10681.87	0.19
4	International	MAN	Turkey	IST	41	Manchester	Istanbul	2692.29	1.05
1	International	MAN	Norway	OSL	2	Manchester	Oslo	1110.95	0.01
2	International	MAN	Egypt	CAI	7	Manchester	Cairo	3743.79	0.06
1	International	MAN	Azerbaijan	GYD	6	Manchester	Baku	4117.98	0.03
1	International	MAN	Georgia	TBS	1	Manchester	Tbilisi	3698.43	0.01
1	International	MAN	Russia	DME	6	Manchester	Moscow -	2575.60	0.04
1	International	MAN	Belize	TZA	113	Manchester	Belize	8191.53	1.05
1	International	MAN	Barbados	BGI	50	Manchester	Bridgetown	6698.85	0.38
2	International	MAN	Canada	YYZ	44	Manchester	Toronto	5511.38	0.55

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No. Of Shipments	Type	Departure Airport Code	Destination location	Assumed Destination Airport Code	Weight per shipment (kg)	Departure Location	Destination Location	Distance (km)	Emissions (tCO_2e)
1	International	MAN	Papua New Guinea	POM	33	Manchester	Port Moresby	14423.32	0.54
Total 247					**616**			**183,422.44**	**88.94**

Table 27:Data supplied and emissions breakdown for water (and wastewater emissions)

Site	Water supply (m^3)	Water Supply (tCO_2e)	Estimated wastewater %	Wastewater treatment (tCO_2e)	Total emissions from water consumption (tCO_2e)
Unit 4 meter 1 (C1)	3937	1.35	100%	2.79	4.14
Unit 4 meter 2 (C45)	936	0.32	100%	0.66	0.98
Unit 6	829	0.29	100%	0.59	0.87
Unit 7	1125	0.39	100%	0.80	1.18
Total		**2.35**		**4.83**	**7.18**

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