



Prepared by

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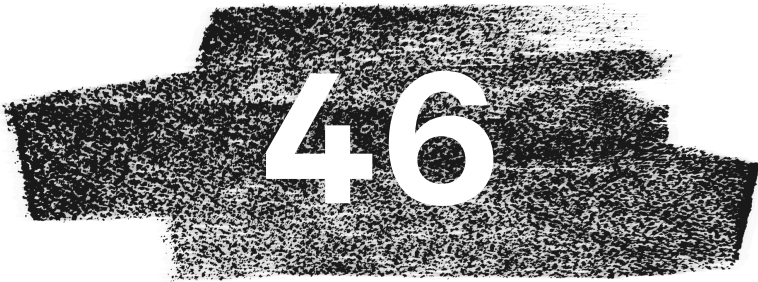
August 2023

# 2022 Carbon Footprint Report.

# Overview

The climate crisis is the single biggest threat to humanity. As a forward-thinking company, Supercritical recognises this. You've partnered with Supercritical to measure, reduce, and offset your emissions.

The first step is to understand your current impact. We've calculated Supercritical's carbon footprint for 01/01/2022-12/31/2022.



Total tonnes CO<sub>2</sub> emitted

That's the equivalent of powering 13 homes for a whole year

17%

of emissions were created from Employee remote working

Emissions associated with Supercritical's Employee remote working generated 7.6 tonnes of CO<sub>2</sub>e emissions.

3.01 t CO<sub>2</sub>e

per employee

LOWER THAN AVERAGE

Your total footprint equates to 3.01 tonnes CO<sub>2</sub>e per employee over 2022. The average footprint for a person in the UK is 12.7 tonnes per year, and the average footprint of an employee in a tech company is ~3.5–5.5 tonnes.

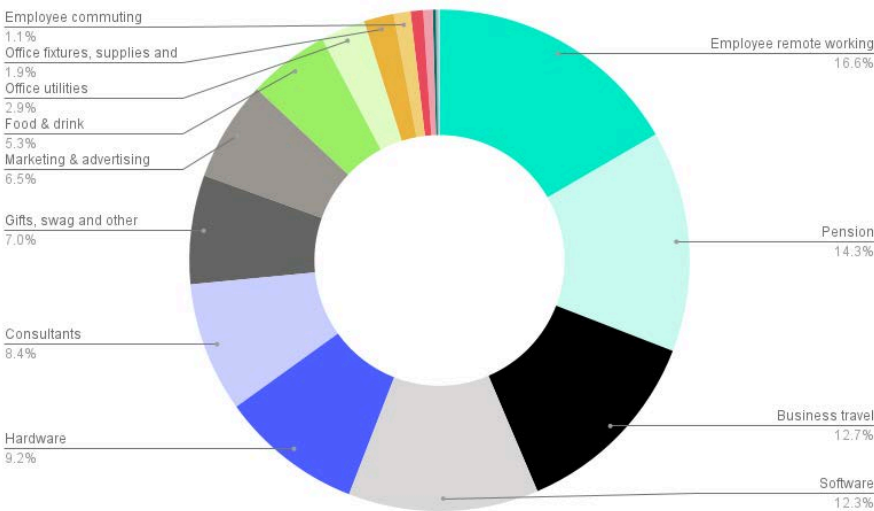
0.07

GHG intensity ratio

ABOUT AVERAGE

The ratio between your footprint and revenue in 2022. This is an industry standard way to normalise your footprint so you can track progress over time.

## Emissions breakdown



(See Appendix A for data and categorisation by scope)

## GHG protocol breakdown by scope

	t CO <sub>2</sub> e
Scope 1	0
Scope 2*	0
Scope 3	46

\*Market-based  
Reporting period: 01/01/2022-12/31/2022  
Emission boundary: Financial control  
Notes on scopes:  
Location-based Scope 2 emissions = 0.00 tonnes CO<sub>2</sub>e



# Our methodology

Supercritical's methodology is aligned with the [GHG Protocol standard](#), the standard developed by the World Resources Institute (WRI), and used by governments & cities all over the world as well as over 92% of Fortune 500 companies.

## Base year footprint

We begin by calculating a base year footprint; the total CO<sub>2</sub>e emissions released as part of a company's activities over the period of a specified year. Companies choose the base year as the earliest whole year for which they have reliable data: for Supercritical this is 2022. Calculating a base year footprint is necessary to set and track progress towards future emissions reduction goals. But since 2022 was a highly unusual year, you can expect many emissions categories to change going forward. We can use backcasting next year to help you understand which of the changes are due to your climate actions, and which are due to other background changes.

## Emissions calculations

Most business activities don't have a direct measurement of the GHG emissions recorded for them. Instead, we use [emission conversion factors](#) to calculate the equivalent emissions created for activities. A number of governments & organisations create and maintain official GHG conversion factors, and the majority of emissions factors we've used to calculate Supercritical's footprint have been provided by the [UK Government's Department for Business, Energy & Industrial Strategy](#) (BEIS) team.

For example, converting a 15km taxi ride into the amount of CO<sub>2</sub>e emitted into the atmosphere, using the BEIS taxi km/ kg CO<sub>2</sub>e conversion factor (0.20369):

$$\text{GHG emissions} = \text{activity data} \times \text{emission conversion factor} \\ 3.05 \text{ kg CO}_2\text{e} = 15 \times 0.20369$$

## Our approach to emissions scope

We use a comprehensive and progressive approach to mapping emissions, aiming to capture the majority of emission sources in your sphere of influence. Emission sources such as home-working emissions are often overlooked. However, they present a huge opportunity for your positive influence!

## Deeper dive: Remote working approach

We wanted to provide more information on our remote working methodology, so you can understand one of the largest contributors to your footprint.

Working from home uses additional electricity (charging laptops and powering external monitors) and heating compared to homes being empty during working hours.

To calculate the impact of employee home-working, first we estimate the additional electricity used. This additional electricity comes from [laptops, lighting and monitors](#).

We have estimated the hours that the Supercritical team worked from home from the data collected in your employee survey.

$$\text{Total home office usage (kWh)} = 150 \text{ watts} \times \text{number of employees working from home} \times \text{working hours per month}$$

Next we translate energy use into CO<sub>2</sub>e emissions using the conversion factors. We take into account the prevalence of renewable electricity providers in the team and their geographical distribution using national grid intensity factors. For example, in the UK this is set by BEIS at 0.212 kg CO<sub>2</sub>/kWh.

We then calculate the impact of the additional energy required to heat employees' homes during this period. An average gas boiler uses 0.5 kW to heat a home. We used information from your employee survey to calculate the total hours of additional heating. Using this information, we can calculate additional heating:

$$\text{Total heating usage (kWh)} = 0.5 \text{ kW} \times (\text{Total number of hours employees had heating on while working from home})$$

Lastly, we translate additional heating into CO<sub>2</sub>e emissions using the BEIS natural gas conversion factor (0.184):

$$\text{Work from home gas emissions (kg CO}_2\text{e)} = \text{Total heating usage (kWh)} \times 0.184$$

This gives us the total emissions created as a result of your employees working from home.

# Reduction recommendations

Emissions reduction plays a vital role in tackling the climate crisis. In order to limit global warming to 1.5°C, the world needs to halve CO<sub>2</sub>e emissions by 2030 and reach net zero CO<sub>2</sub>e emissions by 2050. This requires companies like Supercritical to both reduce emissions and offset those that can't be avoided.

## Summary

	Potential total reduction (t CO <sub>2</sub> e)	Reduction /employee (t CO <sub>2</sub> e)	Potential cost/saving	Impact	Effort
 <b>Hardware</b> Reduce, reuse, repair	1.7	0.11	£7,672	High	Med
 <b>Business travel</b> Explore implementing a sustainable business travel policy	1.1	0.07	-£1,000	High	Low
 <b>Suppliers</b> Engage your suppliers	0.9	0.06	£0	Med	Med
<b>Total</b>	<b>3.7</b>	<b>0.24</b>	<b>£6,672</b>		

Footprint per employee (t CO<sub>2</sub>e)

~~3.01~~  
**2.77**

Total potential reduction

**8%**



# Hardware

## Reduce, reuse, repair



Extracting raw materials and manufacturing new devices such as laptops, monitors, phones and servers creates substantial emissions. Some emissions are also created in shipping and end-of-life treatment. Unlike in financial reporting, where capital assets are amortised over the lifetime of the asset, in GHG reporting all emissions associated with a purchase of capital good fall in the year of purchase.

**Reduce by sustainable purchasing:** We examined the 'Cradle to grave' life cycle analysis of your purchased hardware in 2022 (here are some [example models](#)). The life cycle assessments can often be found online, particularly for [Apple](#), [Dell](#) and [Lenovo](#) and we encourage you to consider the emissions in your purchasing decisions. Equipment with higher specifications tend to have higher footprints – we'd recommend you only buy these for members of your team that really need them (e.g. developers). Monitors, on the other hand, can have variable footprints depending on the model rather than specifications, so it's worth seeking out those with lower manufacturing and use emissions.

**Reuse by buying refurbished items and reselling:** You can buy refurbished items (e.g. from [Apple's refurbished shop](#)), and resell the devices if they can no longer be used for the company purposes (e.g. to Apple's official buy back scheme, or to your employees for personal use). This will also help extend the life of devices that have already been manufactured.

**Repair your current devices:** Enter a repair service contract with a specialist company to manage the repair and maintenance of laptops, extending their life and reducing carbon emissions associated with purchasing a new replacement device. You can keep track of your hardware life and repairs through a [spreadsheet](#).

### How can you implement this?

- ① [Set up tracking](#) to give visibility on the age of hardware when it is retired from use. Your ops team can then set a target to work towards: we suggest a minimum of 5 years
- ② [Give Ops/IT the sources of product environmental reports](#), have them check their preferred models and see if any can be swapped for a lower footprint model
- ③ [Consider purchasing refurbished](#) Apple models
- ④ [Enter a repair service contract](#) with an expert company to manage the repair and maintenance of laptops, enabling them to be used for longer
- ⑤ You can use our template [here](#) to [keep track of refurbished purchases](#) and any re-selling you do

### Scaling impact

Total emissions (kg CO <sub>2</sub> e)	→		
	Lenovo Thinkpad E15	MacBook Pro 16	MacBook Air
	343	255	137

**Impact:**

**High**

**Effort:**

**Med**

**Potential total reduction\*:**

**1.7** tonnes CO<sub>2</sub>e

**Reduction per employee implementing this change\*:**

**0.11** tonnes CO<sub>2</sub>e

**Potential total cost/savings\*:**

**£7,672** savings

\*Assuming less emissions-intensive models are purchased for 15% of laptops and laptop turnover extended from 3 to 5 years

### Emissions tracking

Reductions will be automatically calculated in our footprinting process, since they will show up in your hardware purchases. We're hoping to see your per employee hardware emissions decrease. Please keep track of any refurbished purchases and re-selling so we can incorporate these appropriately.

### Team responsibility

Operations

Scenario analysis

Scenario	Emissions (t CO <sub>2</sub> e)	Per employee (t CO <sub>2</sub> e)
Current assuming laptop turnover of 3 years	4.2	0.28
Reducing over-spec and choosing product with low footprints or refurbished	4.2 (1% ↓)	0.27 (1% ↓)
Reducing over-spec + Hardware turnover extended to 5 years	2.5 (41% ↓)	0.16 (41% ↓)

\*15% reduce over-spec



# Business travel

## Explore implementing a sustainable travel policy

The greenest trip is the one you didn't make! One of your common flight paths, between London to Stockholm, totalled 2 tonnes. There are some considerations you could make to help streamline business travel.

We'd encourage you to consider the following policies:

- Introduce an approval process for travel. This will help increase accountability and reduce non-essential flights
- Implement a train-first policy. For example if a train journey would take under 6 hours, take the train instead of flying
- Promote virtual meetings and invest in digital tools (Miro, Fellow etc.) and training that will make remote meetings more productive
- Optimise unavoidable travel: Try to include numerous relevant meetings within a single trip
- Implement a 1-person travel policy for longer flights e.g. only send the most relevant team member to a conference
- Look for direct flights and avoid change overs (take off and landing are the big emitters)

### A bit on train travel:

Train journeys of less than 6h tend to overall take less travel time door-to-door compared to flying once travel to the airport, time for security and check-ins are taken into account. Train travel is also more reliable, comfortable and offers more productive time while travelling.

Train first policy means that for any journey that would take less than 6 hours by train for example (or longer if it is a sleeper train), train is obligatory. We really like WWF's policy, stating that for journeys of 6-10 hours at least one leg should be done by train.

You could also consider incentives to encourage train travel, such as returning travel time as days off 'in lieu' or business class allowed only on train travel.

### How can you implement this?

- ① Draft and approve your [internal travel policy](#) and checklist that asks:
  - Can this trip be avoided by meeting virtually?
  - Can this trip cover several combined meetings and events?
  - Can it be done by train (for 6h journeys)?
- ② Set up an [internal carbon pricing or budget](#) (optional)
- ③ Organise a [lunch and learn](#) to educate your team on your new travel policy

Impact:

**High**

Effort:

**Low**

Potential total reduction\*:

**1.1** tonnes CO<sub>2</sub>e

Reduction per employee implementing this change\*:

**0.07** tonnes CO<sub>2</sub>e

Potential total cost/savings\*:

**-£1,000** savings

\*Replace shorter distances with rail, reduce 10% and all business class flights with economy

### Emissions tracking

Reductions will track automatically, through your flight log or list.

### Team responsibility

Operations

### Further reading

- [Managing our travel emissions - PwC UK](#)
- [Responsible Business Travel - 9 Ways to Reduce Your Carbon Footprint | LoopUp](#)
- [How to build a sustainable business travel policy](#)
- [Use a third party provider with sustainable business travel policy options](#)

### Case studies & best practices

- Encouraging slow travel through employee perks and travel days e.g. [The Climate Perks initiative](#)
- [Edinburgh University Sustainable Travel Policy](#), encouraging public



Scaling impact

Example journey (1 person) from London to Stockholm				
	Business*	Economy*	Train*	Video Call**
Total emissions (kg CO <sub>2</sub> e)	493.6	329.1	N/A	1.2

\*If a hotel stay is also required, that adds ~ 30kg CO<sub>2</sub>e / night  
\*\*2h, 3 participants

Scenario analysis

Scenario	Business travel emissions (t CO <sub>2</sub> e)	Per employee (t CO <sub>2</sub> e)
Current	5.8	0.38
Replace shorter distances with rail and reduce 10% flights	4.7 (20% ↓)	0.31 (20% ↓)
Replace shorter distances with rail, reduce 10% and all business class flights with economy	4.7 (20% ↓)	0.31 (20% ↓)

transport first for local and national journeys

- [WWF Sustainable business travel policy](#) (including taking the Eurostar to all destinations served by Eurostar, one-way rail journeys to other countries in Europe that take less than 10 hours, must be made by train at least one way; both ways where possible and one-way journeys that take less than 6 hours must be completed both ways by train).

# Suppliers

## Engage your suppliers



The suppliers you hire also have their own emissions associated with their corporate operations, offices and travel. These count towards your Scope 3 emissions under the GHG Protocol.

The best way to influence these emissions is to engage with these organisations and encourage them to measure their own emissions. Beyond this, you can set standards for the companies you work with going forward. This will send a market signal that it is something you care about! Furthermore, having a better idea of their climate goals and footprints can also help improve the accuracy of your footprint next year.

There are varying levels you can engage with your suppliers.

Effort	Strategy	Details
Low	Educational	Share information and details about best practises on the importance of measuring emissions, how to measure and ideas for emission reduction. This could also include a brief summary about your journey to measuring emissions.
Low/Medium	Passive	Send an email to suppliers along the lines of the template here, asking if they are measuring their emissions, whether they have a netzero plan and whether they have purchased conventional offsets or carbon removal.
Medium/High	Active	Additionally to the above email, update internal procurement guidelines to prioritise suppliers which disclose their emissions and have targets.
High	Progressive	Additionally to the above email, draft a procurement policy or update the supplier Code of Conduct, making it mandatory for suppliers to disclose emissions and have reduction targets. You can introduce this in a phased approach e.g. all consulting firms to measure their footprints by 2024 and have a formal net zero target by 2025.

### How can you implement this?

- 1 **Identify the suppliers** that jointly contribute to the majority of your contractor footprint (see below)
- 2 Prepare an **email** (suggested template [here](#)) to send out to suppliers asking:
  - If they have measured their carbon footprint
  - About their total emissions, their emissions intensity metric (per revenue) and detailing which emission sources are included
  - What their net zero journey and goals are
  - If they already purchase any carbon removal or conventional offsets
- 3 **Follow up** with a list of suggested companies they can use to footprint, details about your experience of the process, and suggested reduction options e.g. reducing their scope 2 by switching to renewable energy
- 4 **Draft a procurement policy** that requires consulting firms you work with to measure

Impact:

**Med**

Effort:

**Med**

Total emissions  
(consultants, marketing,  
software)

**11.4** tonnes CO<sub>2e</sub>

Potential total reduction\*:

**0.9** tonnes CO<sub>2e</sub>

Reduction per employee  
implementing this  
change\*:

**0.06** tonnes CO<sub>2e</sub>

Potential total cost/  
savings:

**£0**

\*Assuming your suppliers can reduce their emissions by 7.5%; potential refers to reduction in the first year, but these can continue in the future

\*\*unless you change suppliers as a result

### Emissions tracking

If you can gather data on your main suppliers' firms, we can generate supplier-specific emission factors that will enable us to accurately calculate your emissions and track reductions.

### Team responsibility

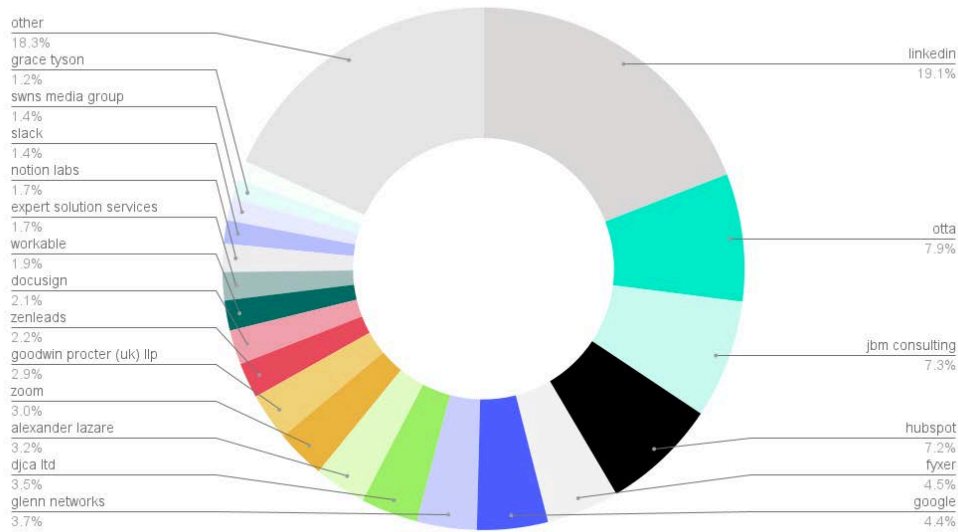
Operations

### Further reading

- [Example Net Zero planning](#)
- [Vodafone offers preferential financing rates to suppliers](#)

their footprints by 2024 and have a formal Net Zero target by 2025

## Breakdown of suppliers



[disclosing carbon emissions](#)

## Case studies & best practices

- PWC [hosted an event](#) for their suppliers
- Phillips [aims to have 50% suppliers](#) (by spend) committing to SBTi's by 2025
- Apple is [urging its suppliers to take action to address their greenhouse gas \(GHG\) emissions](#)
- Albert [sustainable procurement example policy](#)



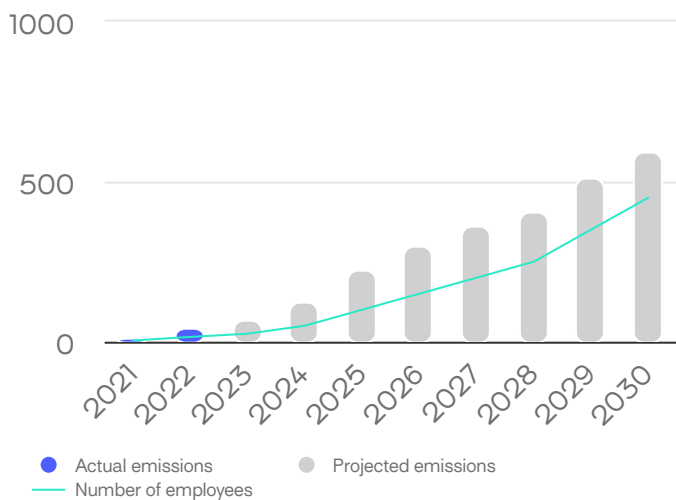
# Emission trajectories

The charts below compare Supercritical's emissions between now and 2030 for two routes; making no reductions to company emissions, and implementing reduction recommendations.

## With reduction

If you do commit to continuous reductions (in addition to the passive reductions that will take place as the world decarbonises), your emissions over the next 10 years will look something like this.

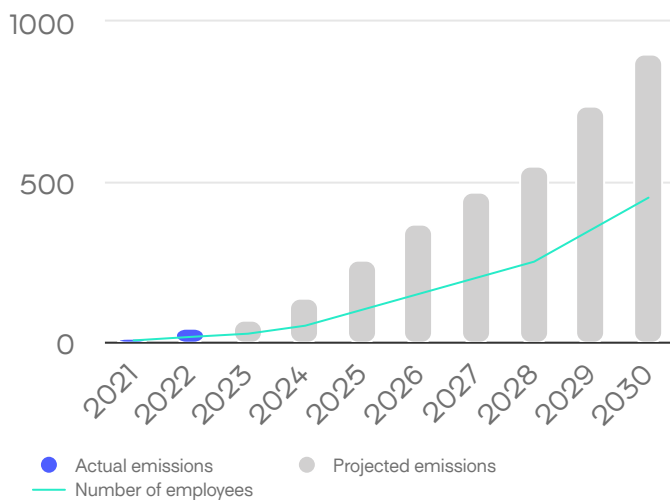
### Absolute emissions



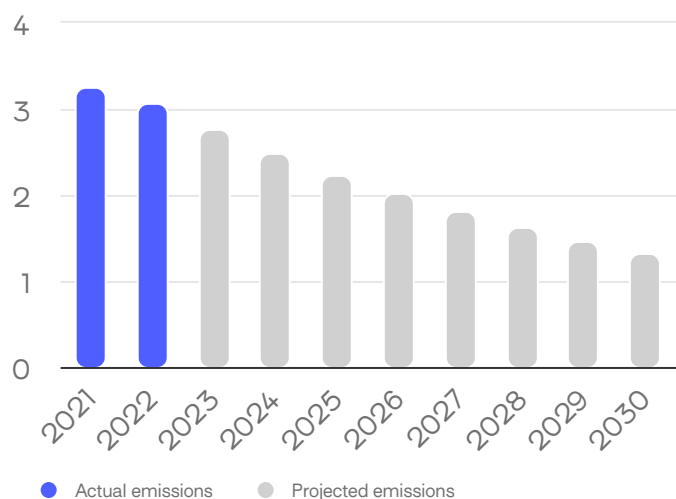
## Without reduction

If you do nothing, as your business grows your emissions will look something like this. The rate of increase will naturally lessen as your various scope 3 sources decarbonise.

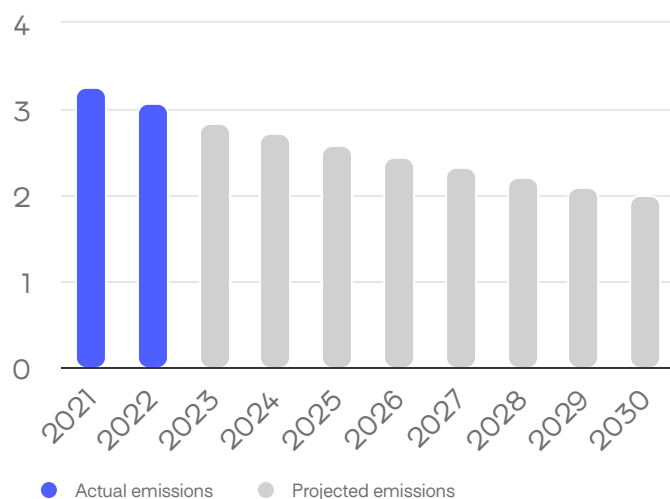
### Absolute emissions



### Per employee



### Per employee

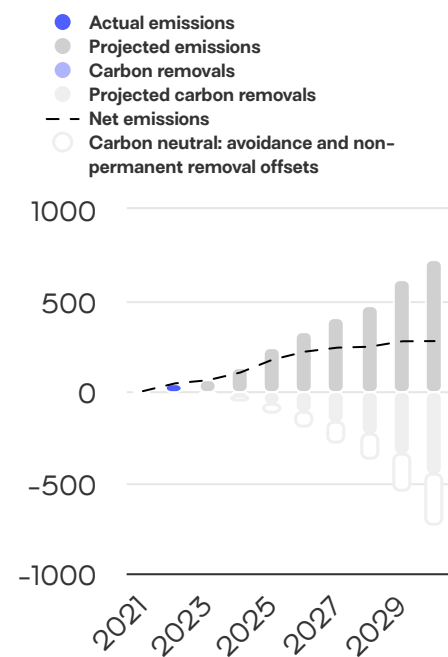


# The path to net zero

To be carbon neutral, companies need to match their total emissions with offsets. Carbon neutral is much less ambitious than reaching net zero because there is no requirement to invest in high-quality durable carbon removal; avoidance offsets like clean cookstove projects are acceptable.

## Carbon neutral by 2030

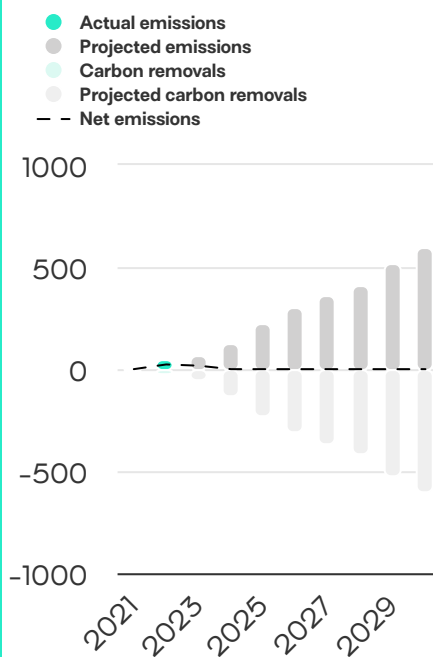
Reduction + gradual removal



To reach net zero, you need to balance the emissions you create with the same amount of carbon durably removed from the atmosphere. This requires Supercritical to set reduction targets and timelines (50% reduction this decade, ~90% reduction by net zero target date). At the point of net zero you will need to remove all remaining emissions with durable carbon removal offsets. It is strongly recommended that while you're on the path to net zero, you invest early in carbon removal. The most ambitious companies are removing all of their current and historical emissions to achieve offset zero.

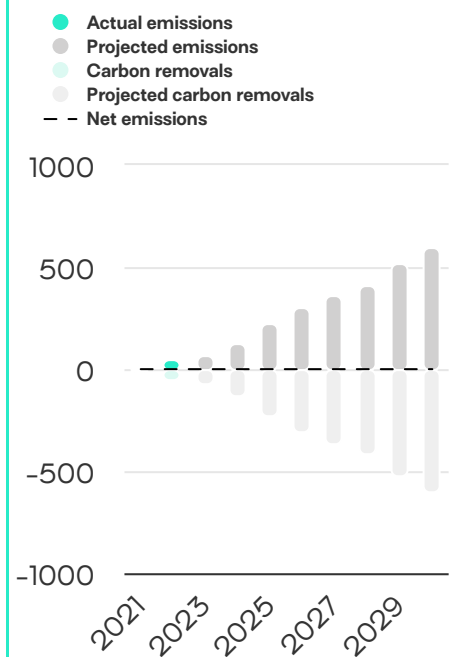
## Fully removed by 2025

Reduction + accelerated removal



## Fully removed ASAP

Reduction + total removal this year



# Appendices

## Appendix A

### Emissions breakdown by category

Category	Footprint (t CO <sub>2</sub> e)	Scope
Employee remote working	7.6	3
Pension	6.5	3
Business travel	5.8	3
Software	5.6	3
Hardware	4.2	3
Consultants	3.9	3
Gifts, swag and other giveaways	3.2	3
Marketing & advertising	3.0	3
Food & drink	2.4	3
Office utilities	1.3	3
Office fixtures, supplies and maintenance	0.9	3
Employee commuting	0.5	3
Cloud & data centres	0.4	3
Training	0.3	3
Insurance & finance	0.1	3
Meeting room hires	0.1	3
Other	0.0	3
Postage and shipping	0.0	3
Total	45.9	

## Appendix B

### Emission sources not included

Emission sources not yet included due to data constraints	Justification
Solid waste treatment	Office waste emissions assumed negligible
Use of sold products	No physical products so use emissions assumed to be small
Scope 3 emissions of AWS	No data provided by supplier; lack of industry averages



## Appendix C

### Breakdown of Scope 3 emissions into GHG protocol categories

GHG protocol Categories	Footprint (t CO <sub>2</sub> e)	Notes
1. Purchased goods & services	19.8	Cloud, Food, Software, Digital marketing, Consultants, Financial services, Insurance, Shipping, Furniture, Office supplies, Training, Printing
2. Capital goods	4.2	Hardware
3. Fuel-and energy-related activities	1.1	Upstream emissions of purchased fuels and electricity (including that associated with business travel, commuting and electricity transmission and distribution losses)
4. Upstream transportation & distribution	0.0	Assumed to be too small to warrant monitoring
5. Waste generated in operations	0.0	Wastewater from the offices
6. Business travel	5.3	Accommodation, flights, train, car and taxis (WTT from travel is included in 3.3 Fuel related activities)
7. Employee commuting	8.0	Based on employee survey
8. Upstream leased assets	0.9	Energy and water used in leased offices
9. Downstream transportation & distribution	0.0	Assumed to be too small to warrant monitoring
10. Processing of sold products	0.0	Assumed to be too small to warrant monitoring
11. Use of sold products	0.0	Assumed to be too small to warrant monitoring
12. End of life treatment of sold products	0.0	Assumed to be too small to warrant monitoring
13. Downstream leased assets	0.0	No reported leased assets
14. Franchises	0.0	No reported franchises
15. Investments	6.5	Employer's contribution to pension funds
<b>Total</b>	<b>45.9</b>	



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