Client email
Demo Company Ltd.

Website
democompany.example

Audit window
01/08/2025 to 31/07/2026

Report author
Considerate Digital

Version
v1.0

Date
31/07/2026

Audit report

Audit report

CarbonClicks is an open source platform that measures the carbon emissions generated every time someone visits a website. Rather than relying on simple proxies like page weight or hosting provider, it captures nuanced data points for each visit. This includes the amount of data transferred, whether the visit was a user's first in a session, and the energy grid-mix of the user's location, allowing us to build a detailed and accurate picture of a website's digital carbon footprint.

This level of granularity matters because, as scope three emissions come under greater scrutiny, cruder measurement approaches are no longer sufficient. CarbonClicks is designed to reveal where emissions are actually coming from, and to guide website owners and developers toward the actions that will have the greatest impact in reducing them.

This audit report covers the period from 01/08/2025 to 31/07/2026, analysing data drawn from the CarbonClicks platform. Carbon modelling uses CO2.js with regional grid intensity and hosting green status factored in. Across the audit window, 91 pages were measured, representing 246 countries and markets. The report covers multiple analytical areas: baseline and trend analysis, which tracks emissions, visits, and users over time; page-level emissions analysis, which identifies the highest-impact URLs and page types; technical performance and infrastructure, which examines transfer sizes, load timing, and hosting; user geography and carbon context, which maps how audience location affects emissions. The report concludes with guidance for future targeted actions to lower overall carbon emissions.

Objectives

- Establish full carbon baseline across user visits, location and pages.
- Isolate and analyse causes of high digital emissions.
- Identify highest-impact technical and design interventions.

Data and method

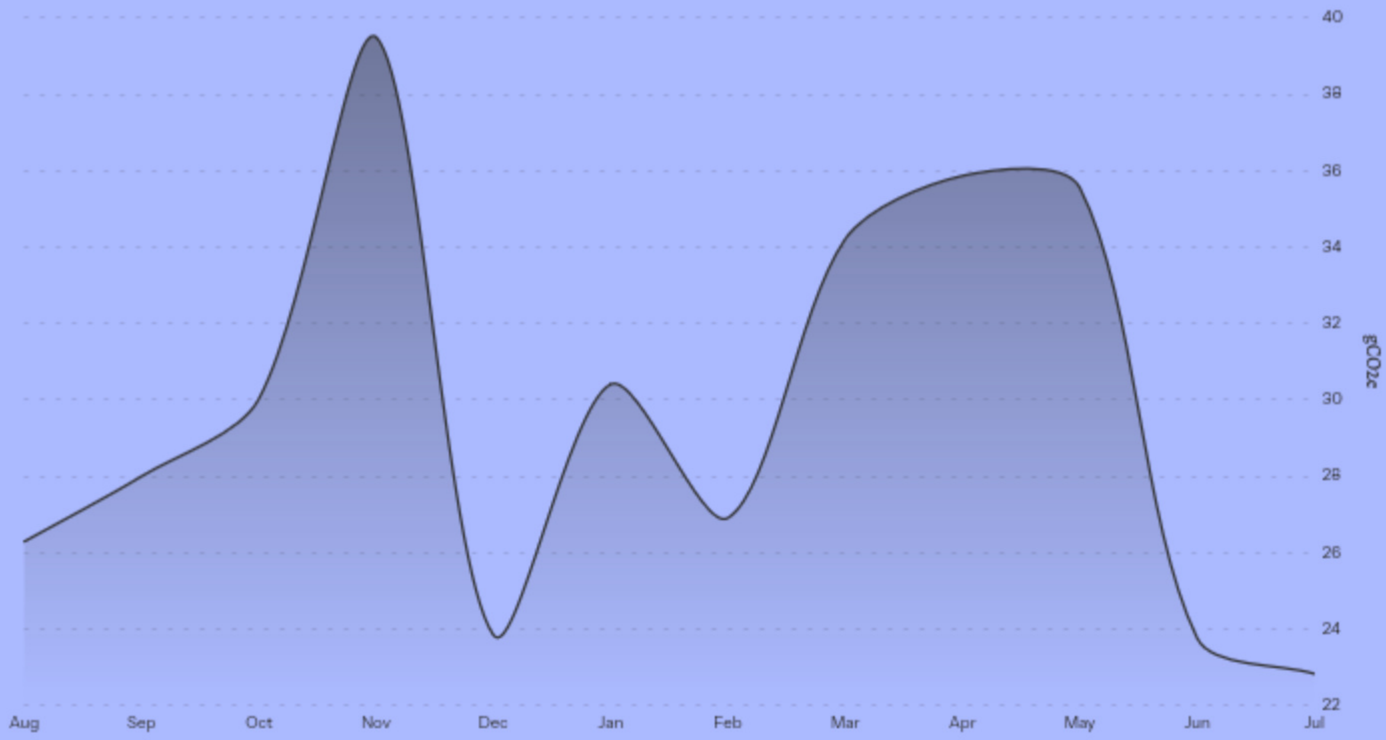
- Data source: CarbonClicks
- Carbon model: CO2.js with regional grid intensity and hosting green status.

Data outline

Total user visits	Total pages measured	Countries represented
867	91	246

Baseline and trend analysis

gCO2e



Trend guidance

Rather than capturing a point-in-time snapshot, this analysis examines how carbon emissions change over time. It separates two distinct drivers of change: whether emissions are shifting because traffic has grown, or because the website is becoming more or less carbon efficient.

Viewing data across a timeline makes patterns far easier to identify; seasonal fluctuations, the effect of specific campaigns, or unusual spikes that might otherwise disappear into aggregate totals. The aim is to give teams a reliable reference point, so that short-term noise can be distinguished from longer-term trends that warrant closer attention.

KPI summary

Total CO_2e	Avg CO_2e per visit	Avg CO_2e per user	Avg page rating
357.0g	0.41g	1.36g	C

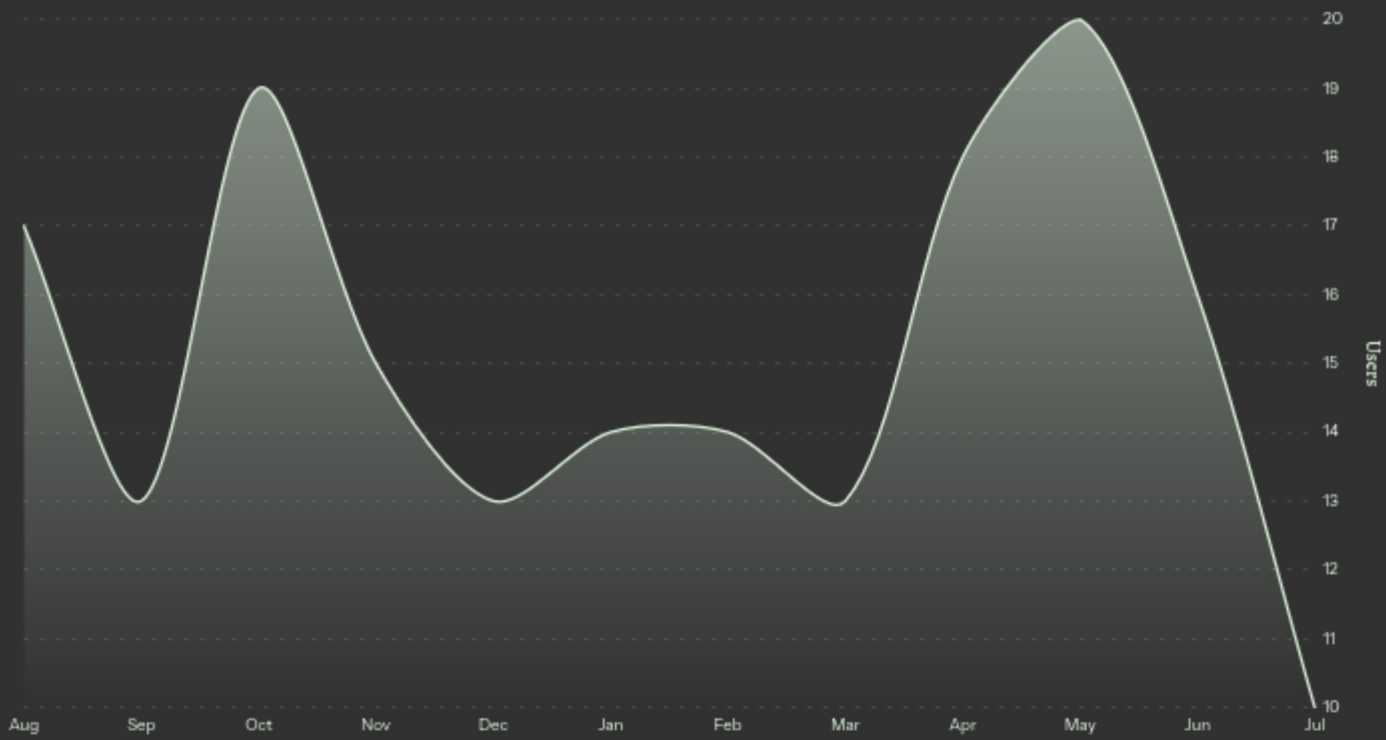
Visits	Users	Avg session length	Efficiency score
867	262	0m 19s	23/100

Snapshot metrics

Pages analysed	Monthly emissions	Annual emissions
91	29.4g	358.0g

Highest-emitting location
Japan

Users

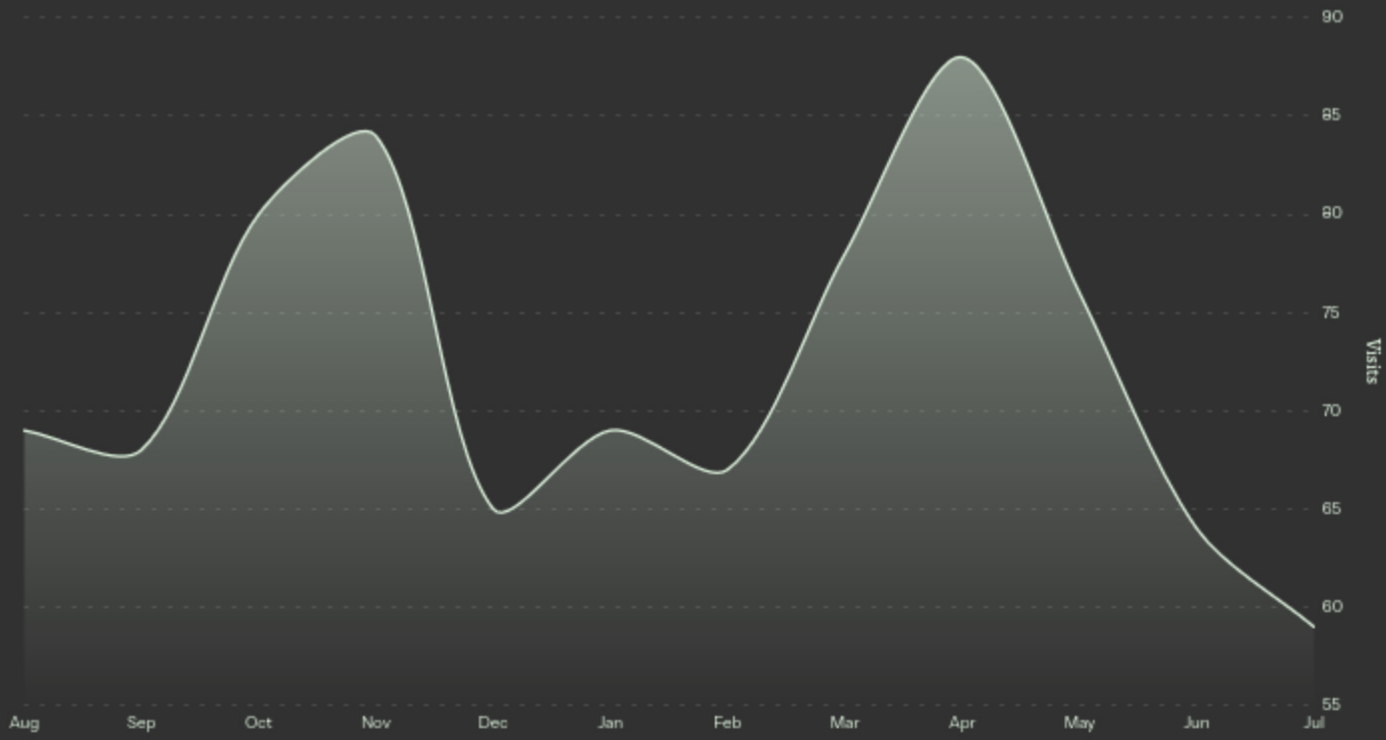


Users

Individual visitors to a website, identified by location, device, and browser. With CarbonClicks, none of this personal data is stored: privacy is preserved throughout the data collection process.

The users metric differs meaningfully from raw visits: when the same person browses multiple pages in a single session, many resources will already be cached locally in their browser and will not need to be re-fetched. This results in a noticeably lower carbon impact than a new visitor encountering the same pages for the first time. Comparing the users line against visits and CO_2e over time is one of the most useful ways to understand how caching behaviour is influencing overall emissions.

Visits

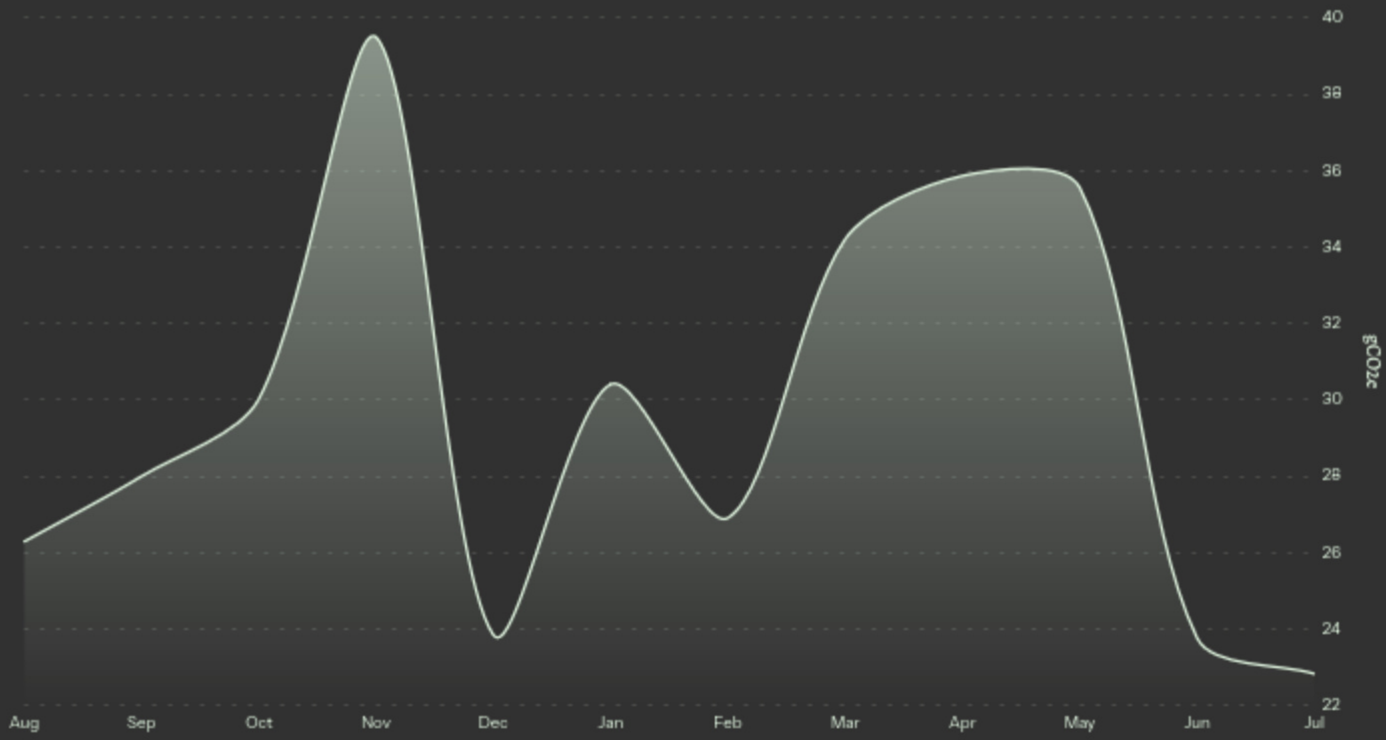


Visits

One of the most straightforward metrics available, visits records the total number of times the website is accessed, regardless of whether the visitor has been before. On its own, it gives a clear picture of demand. When paired with the users and CO_2e graphs, user visits data becomes a useful diagnostic tool for assessing cache performance.

Where the CO_2e graph closely mirrors the visits graph, resources are likely not being effectively cached, meaning each visit is triggering fresh data transfer. Where CO_2e tracks more closely with users instead, it indicates that returning visitors are being served from cache and that this optimisation is successfully keeping emissions lower than raw traffic volumes might suggest.

gCO2e



gCO₂e

Total digital carbon emissions for the website, plotted over time. Broad by design, it is most valuable when read alongside visits and user data rather than in isolation. The "e" in CO_2e stands for "equivalent": this is the standardised unit used to measure the climate impact of various greenhouse gases by expressing their effects in terms of the amount of CO_2 that would cause the same level of warming.

Periods where emissions spike disproportionately relative to traffic can signal a specific event worth investigating further, whether that is a campaign driving new visitors, a page change that increased transfer weight, or a shift in the geographic distribution of users. Used consistently, it builds a picture of the site's emissions trajectory and helps distinguish meaningful progress from short-term fluctuation.

Trend findings

Peak CO_2e	Low CO_2e
19/06/2026	23/06/2026

Max avg daily CO_2e: 19/06/2026	Min avg daily CO_2e: 23/06/2026
6.47g	0.00g

Top referrer: (direct)	Top referrer: --
867	0

Max avg daily visits: 07/09/2025	Min avg daily visits: 28/05/2026
11	1

Page-level emissions analysis

Page-level emissions analysis

Emissions are broken down here by individual page, combining carbon intensity with real traffic levels to reveal where the greatest impact actually lies. Sorting the data by the total number of digital carbon emissions associated with each page helps clarify whether issues are isolated to a single page or reflect embedded structural patterns.

Distribution charts show whether emissions are spread evenly across the site or concentrated on a small number of high-traffic pages. The goal is to make prioritisation evidence-based rather than anecdotal, so that optimisation efforts are directed at the pages and templates where they will make the most meaningful difference.

Top 20 highest-emitting pages

Rank	Page Path	Visits	Total CO_2e	CO_2e per load	Rating	Top Country
1	angle/carried	18	9.39 g	0.52 g	D	Chile
2	applied/again/week	17	8.58 g	0.50 g	D	Fiji
3	organized/none/moving/iron	16	8.35 g	0.52 g	D	Hong Kong
4	population/rise/visit	14	8.30 g	0.59 g	D	Norway
5	we/ago	14	7.96 g	0.57 g	D	Niue
6	situation/knowledge	15	7.20 g	0.48 g	C	Saint Lucia
7	stronger/had/harbor	15	6.57 g	0.44 g	C	Puerto Rico
8	tired/of	10	6.51 g	0.65 g	D	Andorra
9	hair/notice/whale/swam	14	6.20 g	0.44 g	C	British Indian Ocean Territory
10	generally	16	6.10 g	0.38 g	C	Seychelles
11	base	12	5.87 g	0.49 g	C	Trinidad and Tobago
12	pass/dead/blood	12	5.83 g	0.49 g	C	United States Minor Outlying Islands
13	of/term	10	5.82 g	0.58 g	D	Tuvalu
14	dear/addition/growth	7	5.68 g	0.81 g	E	Kyrgyzstan
15	gray/solid/answer/instrument	13	5.57 g	0.43 g	C	Uruguay
16	oldest/enemy	14	5.45 g	0.39 g	C	Bulgaria
17	anything/uncle	13	5.41 g	0.42 g	C	Guyana
18	tool/how	15	5.30 g	0.35 g	C	Peru
19	father/serious	9	5.26 g	0.58 g	D	Curaçao
20	medicine/traffic/interior/continued	12	5.14 g	0.43 g	C	Zimbabwe

Top emitting page

angle/carried

Visits	Total CO_2e	CO_2e per load	Rating
18	9.39 g	0.5216 g	D

Top country by CO_2e: Chile

Top 4 pages by emissions

angle/carried

Visits	Visit share	Avg CO_2e/load	Total CO_2e
18	2.08%	0.5216g	9.39g

applied/again/week

Visits	Visit share	Avg CO_2e/load	Total CO_2e
17	1.96%	0.5048g	8.58g

organized/none/moving/iron

Visits	Visit share	Avg CO_2e/load	Total CO_2e
16	1.85%	0.5220g	8.35g

population/rise/visit

Visits	Visit share	Avg CO_2e/load	Total CO_2e
14	1.61%	0.5926g	8.30g

Technical performance

Technical performance and CO_2e

A direct line can be drawn between technical performance and carbon emissions, showing how page speed and efficiency affect both environmental impact and user experience.

Timing metrics and Core Web Vitals point to areas where large file sizes or slow load times are degrading real-world performance, and a breakdown of transfer sizes explains why certain pages carry a heavier footprint than others.

Hosting is also considered here, since where and how a site is hosted has a material influence on modelled emissions. Use this section to identify concrete technical improvements and to scope the remediation work required.

Pages with highest p95 transfer

population/rise/visit

Transfer
5.72 MB

after/image

Transfer
5.70 MB

fire

Transfer
5.32 MB

Front-end & delivery

Transfer size distribution

p50
628.3 KB

p75
2.96 MB

p95
5.21 MB

Dominant device group	Average transfer per view	High-transfer share (>1MB)
Tablet	1.69 MB	46%

Avg DOM interactive	Avg DOM complete	Avg load event end
1974 ms	2014 ms	1998 ms

DOM interactive percentiles

p50
1989 ms

p75
2963 ms

p95
3833 ms

Infrastructure

Green hosting share	100%
CO_2e on green hosting	357.0g
CO_2e on non-green hosting	0.0g
CO_2e per visit on green hosting	0.41g/visit
CO_2e per visit on non-green hosting	0.00g/visit

Resource guidance

1. **Images**

Start by removing any images that are not essential. For those that remain, resize to the dimensions at which they are actually displayed, compress without unnecessary quality loss, and serve in a modern format such as WebP wherever browser support allows. Use the picture element to deliver appropriately sized assets to different viewports, so that mobile visitors are never downloading images sized for a desktop screen.

2. **Fonts**

Limit the number of font families and weights in use; every additional variant is a separate file download. Use WOFF2 for its superior compression, and specify unicode ranges so that only the characters required by the page are fetched. Preload critical fonts using a rel="preload" link tag, and set font-display: swap to prevent fonts from blocking the initial render. Where a system font is a viable option, use it; system fonts require no network request at all and have no associated emissions.

3. **Video**

Avoid autoplay; video that streams without user intent generates emissions regardless of whether anyone watches it. Where video is necessary, use a dedicated hosting provider rather than embedding files directly, as hosted delivery is optimised to transfer the minimum data required for a good experience. Where the majority of viewers are on mobile, a lower resolution variant will reduce data transfer without a noticeable drop in quality.

4. **Caching**

Set Cache-Control headers across all assets, with max-age values that reflect how frequently each resource changes. Use the immutable directive only for assets guaranteed not to change within their cache window, and stale-while-revalidate for content that updates regularly. Use versioned filenames or content hashes for cache-busting, so that updated assets are fetched reliably without invalidating everything at once.

5. **Hosting**

Choose a hosting provider with a verified renewable energy mix; the Green Web Foundation maintains a reliable database of providers and data centres running on 100% renewable energy and is a good first point of reference. If your current provider does not appear there, contact them directly and cross-check any claims against independent sources.

User geography

User geography

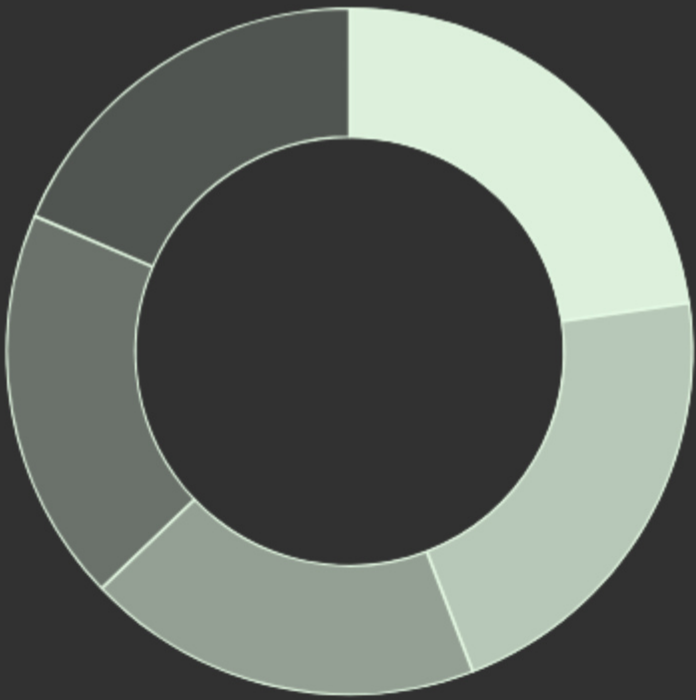
The geographical location of a website's users has a significant bearing on its overall carbon footprint. The same volume of data can produce very different emissions depending on where it is received, because grid intensity varies significantly from country to country.

Breaking traffic down by region reveals where emissions are highest and where targeted action, such as CDN configuration or regional hosting decisions, could have the greatest impact. Use it to determine where location-based improvements are most worth focusing on.

Top 20 countries by CO_2e

Country	Total CO_2e (g)	CO_2e per visit (g)
1. Japan	4.97	0.62
2. Mozambique	4.68	0.59
3. Slovakia	4.09	1.02
4. Singapore	4.06	0.68
5. Chile	4.05	0.81
6. Uruguay	3.97	0.66
7. Brazil	3.90	0.56
8. Guyana	3.89	0.43
9. North Korea	3.83	0.64
10. Bulgaria	3.81	0.64
11. Hong Kong	3.78	0.63
12. Tunisia	3.62	0.52
13. Saint Pierre and Miquelon	3.50	0.50
14. Cyprus	3.43	0.49
15. Madagascar	3.39	0.48
16. El Salvador	3.38	0.48
17. Poland	3.36	0.84
18. Montenegro	3.34	0.42
19. Trinidad and Tobago	3.31	0.66
20. Turkmenistan	3.30	0.83

Top countries by CO2e



- Japan
- Mozambique
- Slovakia
- Singapore
- Chile

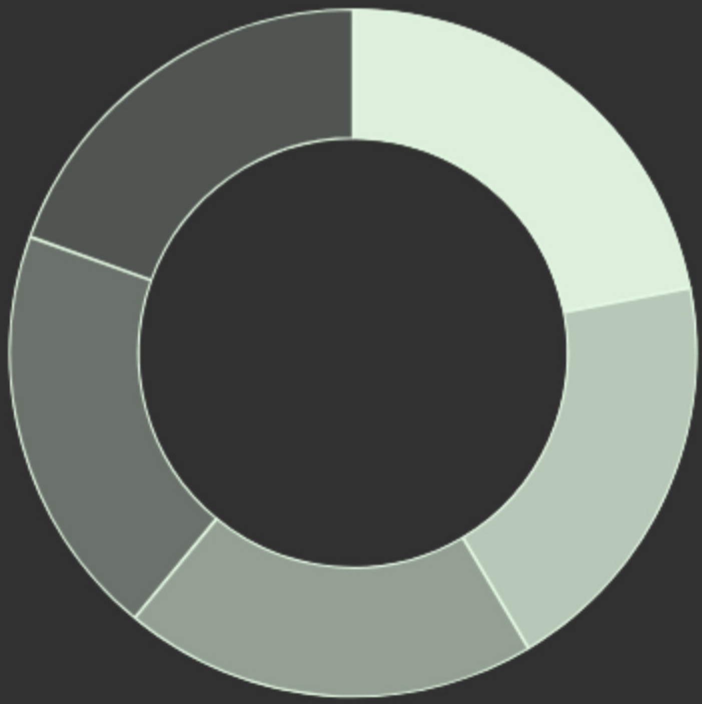
Countries by CO2e

A breakdown of which countries are generating the highest proportion of emissions across the website or digital product. Because grid intensity varies considerably from country to country, a region with moderate traffic can sometimes contribute more to total CO_2e than a higher-traffic region served by a cleaner energy mix. Reading this chart alongside countries by visits surfaces that disparity clearly, and can inform decisions about where to focus infrastructure improvements. Where visit volumes are high but CO_2e remains proportionally lower, local caching or a nearby data centre is likely doing its job well. Where the relationship runs the other way, there may be a case for reviewing CDN coverage or regional hosting arrangements.

Top countries by visits

Country	Total CO_2e (g)	Visits
Guyana	3.89	9
Japan	4.97	8
Denmark	3.02	8
Islamic Republic of Iran	1.49	8
Mozambique	4.68	8
Montenegro	3.34	8
Uzbekistan	0.73	7
Brazil	3.90	7
Madagascar	3.39	7
South Sudan	1.93	7
Mongolia	1.40	7
Tunisia	3.62	7
Montserrat	2.67	7
Cyprus	3.43	7
Nigeria	2.94	7
Norway	2.72	7
Kyrgyzstan	2.84	7
El Salvador	3.38	7
Saint Pierre and Miquelon	3.50	7
Austria	2.32	6

Top countries by visits

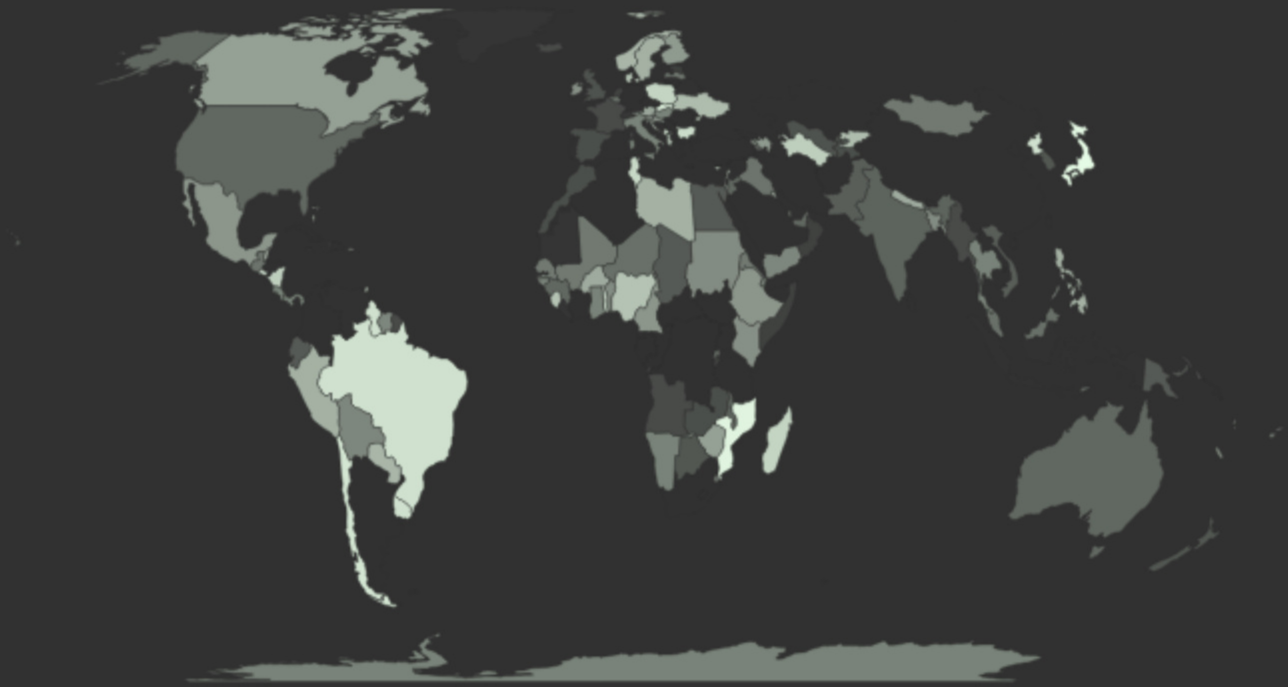


- Guyana
- Japan
- Denmark
- Islamic Republic of Iran
- Mozambique

Countries by visits

A geographical breakdown of traffic to the website or digital product, showing where visitors are coming from and in what volumes. On its own, it gives a useful overview of audience distribution; in combination with the CO_2e and page-level data, it becomes a basis for targeted, evidence-led optimisation. A country that accounts for a large share of visits but sits in a region with a carbon-intensive grid is a natural candidate for localised improvements, whether that means prioritising CDN nodes, reducing page weight for that audience, or revisiting hosting decisions. Pairing this view with page-level analysis makes it possible to identify not just where to act, but which specific pages to focus on for the greatest emissions reduction.

World emissions map



World emissions map

A topographic map of the world, shaded across a colour gradient to show total emissions by country at a glance. Lighter regions indicate higher overall CO_2e contribution, making it immediately apparent where the site's environmental footprint is most concentrated geographically. Unlike the countries by CO_2e pie chart, which surfaces the top contributors as discrete slices, the map conveys the full global picture in a single view, giving a sense of proportion and distribution that a list or chart cannot. It is particularly useful for identifying clusters of high-emission regions, spotting unexpected contributors, and communicating the geographic spread of a site's impact to stakeholders who may be less familiar with the underlying data.

CDNs and data centres tend to serve broad regions rather than individual countries, so the map is well suited to informing infrastructure decisions at that scale; a cluster of lighter countries across a continent may point to a gap in regional coverage worth addressing. Used alongside traffic and emissions data, it helps teams prioritise performance improvements where they will have the most impact, whether that means extending CDN coverage into an underserved region, adjusting caching strategies, or reviewing where compute is being served from.

Action guidance

Guidance

The architecture of the web, built on deterministic HTTP protocols, means that meaningful, targeted action is always possible at the level of the individual page. Each URL is a discrete unit, and improvements made to it will have a measurable and predictable effect. The page generating the highest total emissions is therefore the best place to start. Any reductions made here will carry an outsized impact: shaving even a small amount of data from a page that receives thousands of visits compounds quickly, making it far more worthwhile than optimising a page that is rarely accessed. Start here, measure the difference, and use it as the template for what follows.

angle/carried

Total CO_2e 9.39 g

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1 Images

Images are consistently the single largest contributor to page weight. Begin by auditing every image on the page and asking whether each one is necessary; removing an image entirely is always the most effective optimisation. For those that remain, ensure they are saved at the correct dimensions for the context in which they appear, compressed without unnecessary quality loss, and served in a modern format. WebP offers significant file size reductions over JPEG and PNG in most cases and is now widely supported. Where transparency is required, WebP or PNG remain the appropriate choices. Use the HTML picture element to serve appropriately sized images to different devices, so that a mobile visitor is never downloading an asset sized for a widescreen display. Finally, implement lazy loading for any images that appear below the fold, so that assets are only fetched when they are about to enter the viewport rather than on initial page load. Each of these steps in isolation may seem modest, but applied together across a high-traffic page, the cumulative reduction in data transfer is significant.

2 Third-party resources

Every resource loaded onto a page, regardless of where it originates, contributes to its total weight and to the emissions generated by each visit. Third-party resources, analytics scripts, tracking pixels, advertising tags, social embeds, and external fonts, are particularly worth scrutinising, as they can be easy to accumulate and difficult to account for. Fonts loaded from external services are a common culprit. Where custom fonts are necessary, load them directly rather than via a third-party CDN where possible, use the WOFF2 format for its superior compression, and specify a unicode range to ensure only the characters actually used on the page are downloaded. Better still, consider variable fonts: a single variable font file can serve multiple weights and styles, avoiding the need to load several separate font files. Where a system font will suffice, use it, as it requires no network request at all.

3 Video & audio

Video is one of the most data-intensive media types on the web, and audio is rarely far behind. Content set to stream automatically on page load generates emissions whether or not the user ever engages with it, making it a source of hidden and largely avoidable impact. Unless there is a strong reason to auto-play, set all video and audio to require a deliberate user action before loading. Where background video is used for visual effect, consider whether a well-optimised image, a CSS animation, or a short looping GIF could achieve a similar result at a fraction of the data cost. It is also worth auditing any third-party embeds; social media players, podcast widgets, and promotional video banners can all load substantial resources in the background without it being immediately obvious. Where video is genuinely necessary, use a dedicated hosting provider rather than serving files directly, as hosted delivery is optimised to stream the minimum data required for a good experience, and lower resolution variants should be considered for audiences that are predominantly on mobile.

4 JavaScript & CSS

Unminified JavaScript and CSS files contain whitespace, comments, and formatting that serve developers during the build process but add unnecessary weight in production. Minifying these assets removes that redundancy, reducing file sizes and therefore the data transferred to every visitor. Beyond minification, it is worth auditing the codebase for dependencies and libraries that are no longer needed or that could be replaced with a simpler native solution; a jQuery function that could be rewritten in a few lines of vanilla JavaScript, or a utility library imported in full when only one or two methods are actually used, are common examples of avoidable overhead. Old libraries have a tendency to accumulate quietly over the lifetime of a project, and periodic review of what is actually being loaded and why can surface meaningful savings. The goal is to ensure that every kilobyte of JavaScript and CSS served to a visitor is genuinely earning its place.

5 User behaviour

Not everything on a page needs to load immediately, or at all, for every user. If analytics show that visitors to a particular page typically leave within a few seconds, loading a full suite of heavy assets on arrival means a significant proportion of that data is transferred to users who never see it. Prioritise loading only what is necessary to deliver the core experience, and defer or conditionally load anything else. Intersection observers, scroll events, and timed triggers can all be used to load assets only when, or if, the user reaches them; large images, video, and heavy scripts below the fold are all good candidates for deferred loading. Exit-point pages warrant particular attention: where data shows that users consistently leave from a specific page, that page can be designed to load the minimum viable set of assets upfront, with anything heavier held back unless the user demonstrates intent to stay. Designing around actual behaviour rather than assumed engagement is one of the more nuanced optimisations available, but on a high-traffic page the cumulative emissions savings can be substantial.

Guidance

Highest-emitting location

Japan

The carbon intensity of electricity grids varies considerably from country to country and region to region, which means that the same page, transferring the same volume of data, can produce meaningfully different emissions depending on where it is received. A visitor in a country reliant on coal-heavy generation will generate more CO2e from the same page load than one in a country with a high proportion of renewable energy. Identifying which location is contributing most to total emissions makes it possible to direct infrastructure decisions where they will have the greatest effect.

1 Hosting

The closer a server or CDN node is to a user, the faster the page will load for them, and the less energy is consumed in transit. For the region generating the highest emissions, review whether your current hosting and CDN configuration is genuinely well-positioned to serve that audience. If users in that region are being routed to a data centre that is geographically distant, latency will be higher, load times will be longer, and the energy cost of delivery will be greater. Ensuring that a CDN node or edge location is present within the same broad region, and that traffic is being correctly routed to it, is often the most direct lever available for reducing location-based emissions. Where the highest emitting region also happens to be served by a particularly carbon-intensive grid, there may also be a case for exploring hosting providers in that area who operate on a higher proportion of renewable energy, reducing the emissions factor applied to every page load before any further optimisation is considered.

2 Page weight

If infrastructure changes are constrained, reducing the volume of data delivered to users in the highest emitting region is the next most effective action. A lighter page load means less energy consumed both in transit and on the receiving device, regardless of how far that data has travelled. Review whether assets served to users in this region are appropriately sized and compressed; large images, unoptimised video, and heavy JavaScript payloads will all have a greater emissions impact in a grid-intensive location than they would elsewhere. Where a content delivery or personalisation layer is in place, it may be possible to serve a leaner version of the page to users in this region without degrading the experience.

3 Regional caching

Poor cache performance means that returning visitors are re-downloading resources they have already received, generating avoidable emissions on every subsequent visit. For a region with high traffic and a carbon-intensive grid, this compounds quickly. Check that cache headers are correctly configured for users in this area, that CDN nodes are caching responses rather than forwarding requests to the origin server, and that cache lifetimes are set as generously as the content allows. Static assets such as images, fonts, and scripts should be cached aggressively; frequently updated content can be handled with shorter cache windows or stale-while-revalidate strategies that avoid blocking the user while fresh content is fetched in the background.

4 Grid-mix evaluations

Emissions data for a given region will reflect not just the volume of data transferred but the carbon intensity of the local grid at the time of each visit. This means that improvements to page performance may not always translate directly into a proportional reduction in reported CO2e, particularly if grid intensity fluctuates or if traffic in that region is growing. When reviewing the impact of any changes made for a specific location, read the emissions figures alongside visit volumes and transfer size data to build a complete picture. A reduction in data transferred per visit is a reliable indicator of genuine progress, even in periods where grid intensity is temporarily elevated.

Further work

The actions outlined here are intended as a starting point, prioritised by impact and grounded in the emissions data gathered for this audit. Each one can be explored in considerably more depth; the choices made around image formats, caching strategies, font loading, and hosting all have technical nuance that a brief summary cannot fully cover. Detailed guidance on each of these topics, including practical implementation advice and code examples, is available at carbonclicks.io. Whether you are a developer looking for specific technical direction or a stakeholder seeking to understand the options available, the guides are written to be accessible at both levels and updated to reflect current best practices.

CarbonClicks