

Make better ads

Understanding the advertising industry's environmental impact and what we can do to reduce it.

WeTransfer Advertising

It's time to clean up (y)our ads

Everything generates emissions. Yes, even your online activity.

According to the latest studies, the carbon footprint of our gadgets, the internet and the systems supporting them account for approximately 2-4% of global greenhouse gas emissions.

That's almost double the airline industry.

Awareness of this hidden footprint has been growing, and the wider industry is starting to take steps to counteract it. **And if you can't measure it, you can't manage it.**

Here's ours. Let's see yours.

We calculated the CO2 footprint of our ads. You'll find CO2 emissions per impressions included as a standard metric in all campaign reports.

83kg CO2 emissions per 1,000,000 impressions

Transparency is key to driving the ad industry forward, so, here's our full methodology on how we were measuring and reporting the footprint of serving a digital ad, how we calculated the footprint and what we're doing to improve it.

Three things the digital advertising industry can do today

In three simple steps you can join our mission to advocate for more transparency, while reducing the environmental impact of your next campaign.

1
Ask publishers to provide emissions per impression

2
Cut complexity and improve transparency of supply chain

3
Optimize ad spend with higher-quality publishers

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It's time to clean up (y)our ads

How digital campaigns can be creatively designed and executed through an environmental impact lens

Introduction



Being online, like most things, generates emissions. In fact, the latest studies estimate that the carbon footprint of our gadgets, the internet and the systems supporting them account for 2-4% of global greenhouse gas emissions. That's almost double the airline industry.

The good news is that awareness of this hidden footprint is growing, and the wider industry (including major brands and media buyers) is taking steps to counteract it.

The not-so-good news? There's little transparency from digital media owners on campaign emissions. And, if you can't measure it, you can't manage it.

WeTransfer has already started the journey to understand more about our digital footprint and contribute our own industry research to the matter. We're on a mission to reduce our carbon footprint by 30% by 2025, and are focusing on measuring more, getting better data and engaging with suppliers to get better insights into our emissions.

It's becoming clear that the carbon footprint of various media distribution options is gaining significance, and will play an increasingly important role in shaping where media budgets are invested. It's expected that this will become more urgent as brands need to deliver on absolute emissions reductions and net-zero pledges.

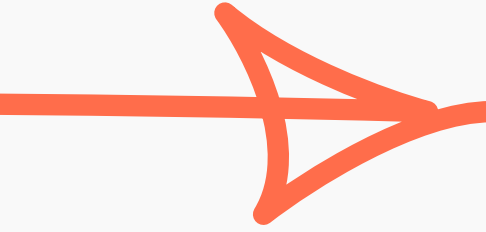
This is why we worked with DIMPACT to calculate the CO2 footprint of our wallpapers and include it in all campaign reports. We also worked with the Carbon Trust to identify ways to address roadblocks in measuring emissions from digital ads, and the action needed to provide advertisers with the right information to reduce these emissions. We're committed to creating real change, and these partners help us (and you!) to do what it takes to plan and optimize campaigns with the environment in mind.

With this knowledge to share, we've signed on to work with our clients and the rest of the industry to understand and address the footprint of digital ads.

It's just one of the ways we think about our environmental impact. We were born with the idea of making ads that help shape a better future for the advertising industry and we're serious about taking action to reduce its impact as a whole, not just within the walls of our offices.


We can work together to shape it, and help move the industry forward. From our clients, partners, our data center providers, ad tech partners and all of our employees, reducing the impact of digital advertising on the environment is a win-win for everyone.

In this whitepaper,
we hope to...



Share insights on the digital advertising's carbon footprint that will spur media platforms, media holding companies, brands and our partners to take action.

Take a step beyond the current industry knowledge and actively tackle the roadblocks to accurately measuring ad emissions so that advertisers have everything they need to reduce theirs.



Advertising's hidden footprint

The race against the emissions
clock as digitalization grows

As more and more people come online, emissions will continue to grow

How can digital ads create greenhouse gas emissions? When it comes to online advertising sharing data, powering data centers and device usage all create emissions.

In the milliseconds it takes for an ad to pop up on a webpage, many companies like ad agencies, data platforms, and ad servers are in a fast-paced bidding contest. They're all vying for the chance to display an ad to a particular [group](#). It's a rapid digital competition behind the scenes, making sure the right ads reach the right audience. All this requires energy, which creates emissions.

As more and more people come online, emissions will continue to grow. We're more online than ever and internet traffic is expected to grow 40% per year. That's a [40x increase by 2030](#).

Based on the most widely referenced data, the average digital ad campaign can produce around [5.4 tons of CO2 emissions](#). The longer and more intricate the journey from the server to the user's devices, the bigger the energy consumption and emissions. This number will evolve as we understand more about the supply chain, but it's still a reminder that the efficiency of the ad supply chain plays a significant role in environmental impact.

Recently, individual advertisers, holding companies, creative agencies, industry associations, and collaborative working groups have begun to acknowledge the impact, have made dedicated commitments to shrink their carbon footprint or generously shared valuable resources to help others do the same. Coalitions, like [Ad Net Zero](#), are committing to real practical changes as a way towards net zero by the end of 2030.

[A recent study by the IAB](#) found that over half of digital advertising companies don't measure emissions. This inaction can in part be attributed to the lack of availability and transparency around emissions data.

Sustainability practices are urgent, and they are also beginning to be a legal requirement. Under strengthening [EU initiatives](#), many companies will have to measure and report their Scope 1, 2 and 3 emissions.

Three things the digital advertising industry can do today

In three simple steps you can join our mission to advocate for more transparency, while reducing the environmental impact of your next campaign.



1 Ask publishers to provide emissions per impression

Not enough digital media owners offer transparency on campaign emissions. It's only when advertisers have the ability to compare the carbon footprint of different media placements that they can make truly informed decisions and take steps to reduce emissions in their media strategies.

As an example, WeTransfer recently conducted a comprehensive focus group initiative. We brought together representatives from some of the world's largest media buying agencies, including Essencemediacom, dentsu, UM, Havas, PHD, mSix&Partners, and more. It was broadly agreed that for a more conscious approach to media planning, emissions per impressions needs to be a standard alongside all other campaign metrics, not tagged on at the end.

2 Cut complexity and improve transparency of supply chain

Action across the entire supply chain is critical, timely and transparent vendor data are essential to understanding the footprint of digital advertising and actively addressing it.

Shorter supply chain means a smaller footprint. The longer and more complex supply chain that an ad has to travel from server to user devices, the more energy and emissions are created. Based on a recent study, a shorter supply chain with fewer intermediaries, such as direct spend campaigns, can produce around ~80% fewer emissions in comparison to programmatic.

3 Optimize ad spend with higher-quality publishers

Digital ads with higher attention have been tied to lower carbon emissions. Fewer ads on a site is a better experience for the user. And fewer ads mean less emissions and greater attention on those that remain. It's a win-win.

WeTransfer Advertising

Award-winning ads people actually want to see

Through intuitive tools that get ideas moving, and attention-grabbing ads that people actually like, we connect and empower creator communities worldwide.

WeTransfer delivers quality reach at scale. We **engage 80M active users every month in 190 countries**. Founded BY creatives FOR creatives, we have built a trusted and authentic brand amongst the creative community.

Whether it's high-impact video or immersive storytelling, we deliver to the people that matter. Through ads that are both beautiful and appealing yet non-intrusive, our advertising supports the creative flow, rather than distracting from it. Our full-screen format allows us to create clean, immersive advertising with the focus on a single message.

Actively working to reduce the footprint of (y)our ads. We're [climate neutral certified](#), backed by our [science based climate goals](#), and are on track to reduce our carbon footprint by 30% by 2025.

Rest easy on what surrounds your ad with our brand safety policies. 100% share of voice, and over 30% of our ad inventory worldwide to showcase diverse creative voices and causes we care about.

You advertise, we support. 1% of all revenue goes to WeTransfer's [Supporting Act Foundation](#), providing a helping hand to emerging artists and community-centered initiatives—ensuring they have the resources they need to create long-term, systemic change.

Your brand achieves the highest standard of [accessibility](#) through user-centric design. We keep the diversity and uniqueness of our audience in mind by ensuring our advertising content is readable on a wide range of screen sizes, is appropriate for all ages, and is accessible for all.



WeTransfer's entire approach to advertising is underpinned by our commitment to responsibility.

As a B Corp, your brand is safe with us.

So what's a B Corp anyway?

B Corps are companies that harness the power of business growth to make a positive impact on the world—balancing people, planet, and profit. Think Aveda, Allbirds, Chloè, Warby Parker, Ben & Jerry's, and WeTransfer. Learn [more](#) and check out our [Impact Score](#).



When hearing the term **'digital advertising,' WeTransfer users** are more likely to **experience positive emotions¹**:

51% | 150 Index **'Excited'**

53% | 143 Index **'Connected'**

46% | 184 Index **'Happy'**

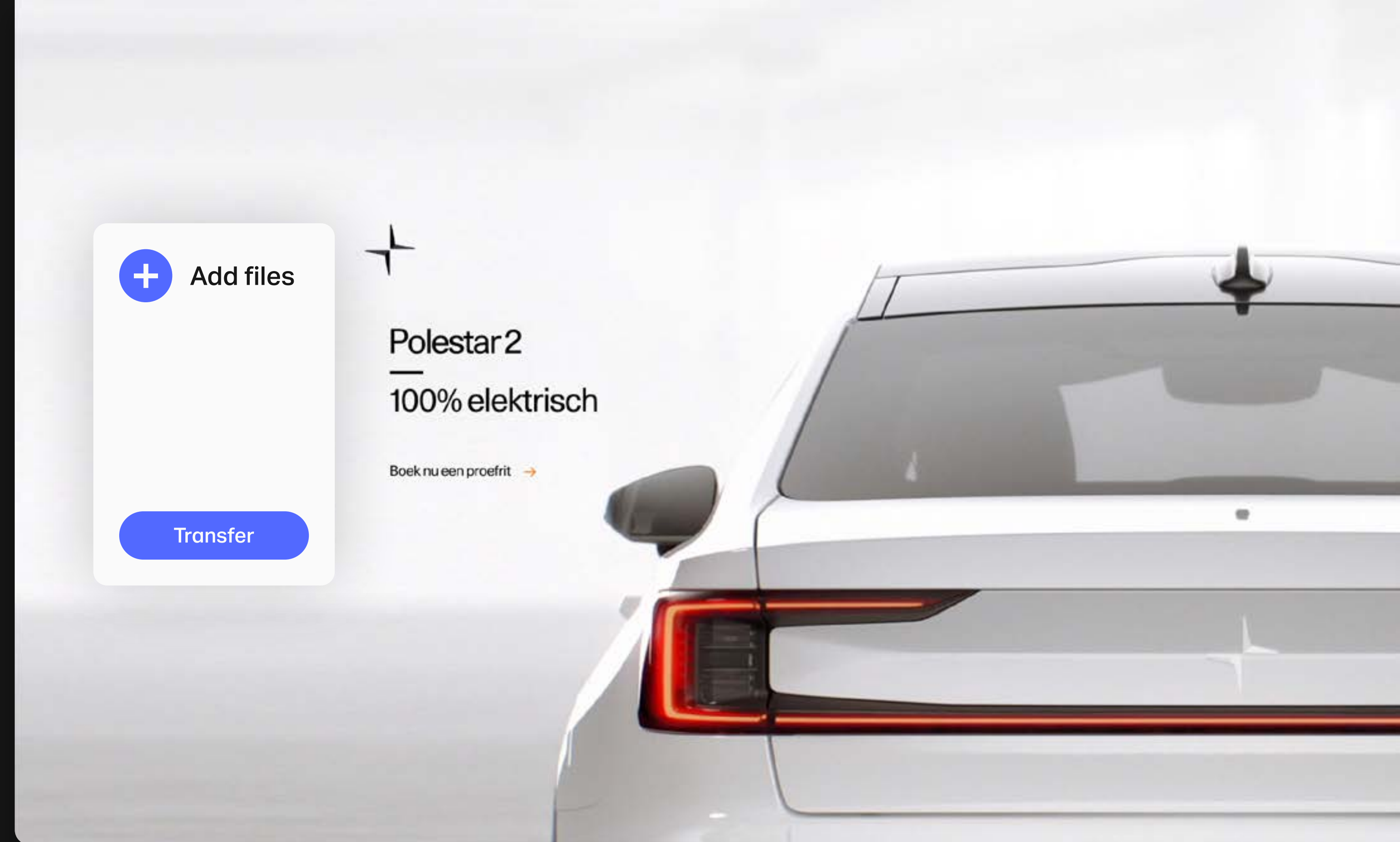
45% | 141 Index **'Entertained'**

43% | 187 Index **'Trustful'**

39% | 134 Index **'Purposeful'**

57% | 133 Index **WeTransfer users are more likely to be purpose driven** "Premium advertising should allow me to be part of something bigger / contribute to a greater cause"¹

¹ WeTransfer Digital Premium Advertising Survey, Suzy, 2023 an index above 100 means that WeTransfer users are more likely to exhibit this particular trait. An index of 150 means users are 50% more likely to connect "excited" to "digital advertising" compared to non-users of WeTransfer.

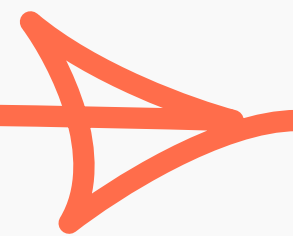


More than 8 in 10 WeTransfer users say: "I consider the advertising I see on WeTransfer to be premium."

The CO2 footprint of a WeTransfer ad

100% share of page, better user experience, less waste. Jackpot

83kg CO2 emissions per 1,000,000 impressions*



“You can’t manage what you can’t measure”

Measurement is key to improvement, and we include campaign level carbon emission reports as standard to support brands in measuring and addressing the impact of digital ads.

The first step is to make sure all our clients are in-the-know about the emissions linked to their campaigns. And, together, we can take the next steps to meaningfully address it.

***A small (yet important) note**

This figure was generated by WeTransfer’s carbon footprint model, and should be interpreted as an average figure for ads served globally, using WeTransfer data from 2022.

In the [appendix](#), you’ll find more details on how this metric should be used, our methodology, assumptions, and what we’re doing to improve the measurement.

The Carbon Trust reviewed the model to identify areas for improvement.

It’s not just us, the industry wants action, too. We spoke to some of the world’s biggest media buyers, including Essencemediacom, dentsu, UM, Havas, PHD, and mSix&Partners among others.

“CO2 emissions per impression needs to be up front with core campaign measurement metrics: effectiveness, conversion and cost”

“Collaboration is critical to success, and needs to come ahead of competition right now. We need to work together to share solutions and what works.”

CO2 Emissions Report

Though we haven't done a like-for-like comparison with programmatic advertising, through mapping and measuring our digital supply chain, we can confidently conclude that our current direct approach to ads reduces the need for additional server infrastructure, reducing the complexity of the supply chain and lowering emissions.

**80% fewer
emissions generated
vs. programmatic**

Estimated industry average*

514.8 grams CO2 per 1000 programmatic ad impressions

1,000,000 impressions = **514 kg CO2**

WeTransfer Advertising average

1,000,000 impressions = **83 kg CO2**

*Scope3 State of Sustainability Report - Q1 2023

How we went about measuring the footprint of a WeTransfer ad

Working together to create an action plan

Mapping our digital supply chain: meet DIMPACT

In 2022, we worked with [DIMPACT](#) to map our ad infrastructure and calculate the emissions per impressions of a WeTransfer ad (or wallpapers as we like to call them). With these insights, we're able to work with our advertising clients and supply chain partners to understand and address the footprint of our ads.

As a DIMPACT member, we're regularly engaging with the industry on how to estimate and address emissions from digital ads. We presented our findings at London Tech Week and contributed to [research](#) about possible solutions for the Information, Communication and Technology (ICT) sector to continue reducing energy consumption and carbon emissions.

DIMPACT

DIMPACT is a collaborative initiative between leading media, entertainment and technology companies and world-class researchers. Part tool and part community, DIMPACT has been developed with cutting-edge expertise from computer scientists at the University of Bristol, and is convened and delivered by Carnstone, a sustainability consultancy based in London.

Paving the way towards transparency and action: meet The Carbon Trust

Once we'd mapped out our major sources of carbon emissions, we joined forces with [The Carbon Trust](#) to evaluate the quality and credibility of our carbon footprinting methodology and model. Our aim was to gain a deeper insight into how we can reduce our advertising's carbon emissions, and ultimately support better decision making.

Working with The Carbon Trust was a critical step in building a roadmap for the whole industry to improve the accuracy of measuring emissions from digital ads and providing advertisers the information and tools that they need to take action to reduce theirs.

The Carbon Trust crosses our Ts and dots our Is. They review our measurement model and expertly steer us down the right path when it comes to identifying the ways we can reduce emissions.

This whitepaper is our flag in the sand. We want to open up our discoveries to the industry, as part of our commitment to expanding collective knowledge and action. Our goal is to break through existing barriers and offer insights that go beyond current industry knowledge. **We're focused on empowering advertisers with the right information to take meaningful steps in reducing their environmental impact.**

CARBON TRUST

The Carbon Trust is a global climate consultancy driven by the mission to accelerate the move to a decarbonised future. Climate pioneers for over 20 years, it partners with businesses, governments and financial institutions to drive positive climate action. From strategic planning and target setting to implementation and communication, the Carbon Trust turns ambition into impact. To date, its 400 experts have helped set over 200 science-based targets and guided more than 3,000 organizations and cities across five continents on their route to Net Zero.

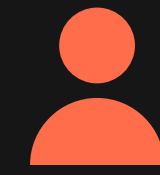
[View our full digital supply chain on page 37](#)

Our digital supply chain

Key:

Emissions produced as a result of activities

% Estimated % of lifecycle emissions



Ad Production

Operational energy consumption of WeTransfer's ad related teams is calculated separately as part of overall business footprint (see our [latest Responsible Business Report](#)).



Final ad creative delivered

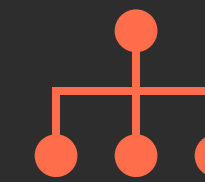
Uploaded and stored into data center



Ad engineering

1.2%

Partners that manage ad inventory, performance and monitoring



Ad management

0.6%



WeTransfer ad displayed on user's desktop or laptop

Electricity generated to power user's devices

32.7%



In-home networking

Internet transmission via home terminals and routers

5.8%



Data center

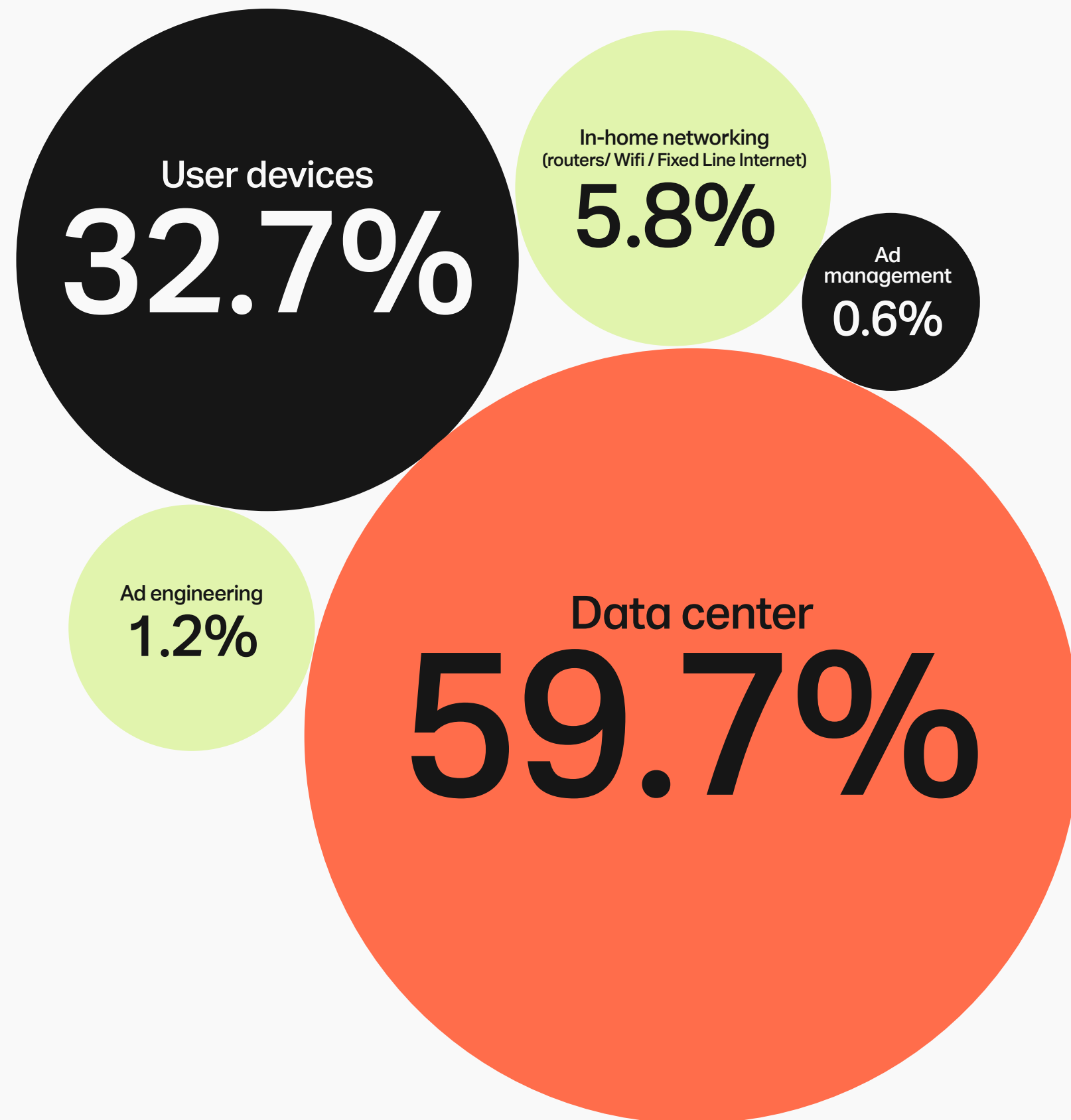
Storage and Encoding + Content Delivery Network (CDN)

59.7%

What we learned from our digital supply chain

Here's ours. Let's see yours

1 Here are the biggest hotspots in our supply chain:



From mapping our digital supply chain for direct spend wallpapers, we're able to see that our advertising infrastructure is quite efficient. With fewer partners involved in serving ads, we're reducing energy consumption and emissions. Cool, eh? - which we are confident reduces 'waste'.

It turns out that IT usage makes up a larger portion of our overall emissions. It's worth noting that this includes all AWS processes unrelated to ads, such as file transfers, to be conservative in our measurement. We're looking into ways we can separate these emissions from the emissions created by the advertising infrastructure (that's covered in the gap analysis section).

Reducing the carbon footprint of our data handling starts with recognizing the environmental impact of digital infrastructure in general. We're all about exploring innovative solutions in how we use this technology. In our partnership with

Amazon Web Services (AWS), we've found a like-minded ally ready to join us on this journey.

In fact, we've already made the switch over to more [efficient processors](#). Together with Amazon Web Services (AWS) we've actively looked for ways to optimize our server user and continue to reduce the environmental impact of our cloud storage.

We've also made it easier for organizations looking to cut their own emissions from their data centers with the recently published [Doing Business Better](#) — a toolkit with advice and best practices.

2 Direct spend, smaller footprint

Shorter supply chain means a smaller footprint. The longer and more complex the supply chain that an ad has to travel from multiple servers to user devices, the more energy and emissions are created. Based on a recent study, a shorter supply chain with fewer intermediaries, such as a direct spend, can produce around [~80% fewer emissions in comparison to programmatic](#)

What's the difference between direct spend supply chain and auction based programmatic supply chain?

- A lot of media owners use one or even several Supply Side Platforms (SSP) to generate ad revenue and place targeted ads.
- These SSPs interact with demand side platforms (DSP) that represent advertising clients.
- These two platforms are constantly communicating with each other and bidding for ad space. More communication = more energy consumed and more emissions. Opting for a direct spend could lead to reductions all around.

3 There's (more) work to be done to improve the state of digital product footprinting

When we think of the cloud, we think of something light and fluffy rather than the gigantic infrastructure, resources and energy that make being online possible. Digital footprints are beginning to receive the same awareness as physical footprints for products and organizations.

Digital products and services have components across multiple (often closed) systems, and each needs its own energy and resource requirements.

On top of that, the well-known cradle to grave/gate approaches of product carbon footprinting are still evolving for digital products. The typical life-cycle processes aren't necessarily fit for purpose when it comes to digital products and services.

According to the [GHG Protocol](#) Scope 3 Standard, Use of Sold Products for a digital

product, which includes data transmission to end-users, and the viewing devices themselves (for companies that don't sell the device), are an 'optional' category for a company like WeTransfer. As an industry, we need action and agreement on what the boundaries of the (embodied) emissions, energy and materials required to deliver a digital ad.

So, where do we begin? Here's a few starter questions:

- How much energy is needed to host a product across servers, cloud containers, and content delivery networks?
- How does an organization measure how much energy is needed for users to use their product or service over time? (Especially across different devices).
- What does 'end-of-life' measure, when you can't 'dispose' of a digital asset?

4 Standardization and transparency are (still) a challenge

We know how hard it is to measure the footprint of an impression, without creating one more new format.

While this is our current approach, we support a common, industry-wide methodology and shared parameters, to help measure the carbon impact of media channels and formats across markets.

We need an industry-wide measurement process that's transparent and consistent in the way data is collected and calculated. Which will avoid biasing towards specific channels, formats, buying methods or reporting. By default, it'll also make it easier for media vendors to provide data along similar specifications, and agencies will benefit from a consistent data set when it comes to their bespoke planning tools.

We need an industry-wide measurement process that's transparent and consistent

Closing the gaps aka our to-do list

As with most things in sustainability, it's complex.
But we're up for a challenge

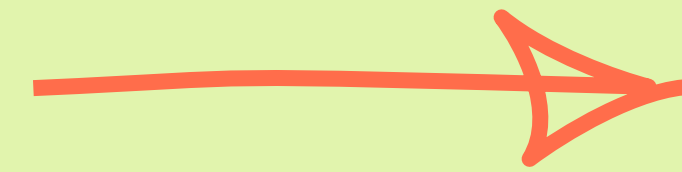
Our mission was to provide the industry and our clients with actionable steps to reduce carbon emissions from WeTransfer campaigns. We want to make sure that any changes we make are having a real-world net reduction of emissions, not just reduction in our carbon accounts.

When you're thinking big like we are, it's important to do things properly. When it comes to sharing our findings with the world, we want to consider the impact over the short, medium and long-term. While it might make sense to take the quick route and prescribe immediate actions to move emissions off our accounts, but not actually change much, we believe that the long-term impact is what truly matters. So, we're taking a beat and to make sure we do it right.

We know there's a lot more work to be done before we can provide concrete solutions. The Carbon Trust has helped us identify the challenges in delivering a real-world impact in reducing emissions from digital advertising, which are similarly recognized by the broader industry.

Product Carbon Footprints (PCF) of products including goods and service can vary, and are influenced by factors like data quality, the boundary of the product being assessed, and assumptions about how customers engage with the product. It's a reminder of the dynamic nature of sustainability metrics.


Here are three factors influencing the carbon footprint of web-based products and services:



- 1. Emissions from the generation of electricity that is used to power data centers, networks and user devices vary by region, depending on how electricity is generated locally.** For example, the majority of France's electricity is generated by nuclear energy while the US relies on a mix of fossil fuel generation, renewables, nuclear and hydropower. With this in mind, it is assumed that emissions from serving an ad in France are lower than serving an ad in the US.
- 2. How users access the digital content** (such as the type of device that they use), and whether the service they're accessing affects the energy consumption of that device.
- 3. How efficiently data centers operate** - including the efficiency of the hardware and cooling infrastructure, as well as the efficiency of the code running on these data centers and how well these factors are represented in emissions reports provided to customers.

Understanding uncertainty in carbon footprints can be a big challenge, but it's a helpful one. It gives us a more well-rounded view about how sensitive and varied the results can be to different factors, such as the ones listed above.

The Carbon Trust recommends four actions to begin identifying the levers to reduce emissions from digital ads:



1 Clear, transparent emissions reports from data center providers

WeTransfer and DIMPACT should use industry connections to make a call for a standardized approach to measuring and reporting emissions by data center service providers. This includes convening a working group of data center service providers, customers and GHG reporting practitioners to share learnings, develop and publish best practices.

2 Cocreate a Product Category Rule (PCR) for more consistency and transparency across the industry

A PCR would act as a set of definitions and guidelines the whole industry could align on when it comes to reporting an ad's environmental impact. This could help the industry align on important details like unit of analysis, allocation of rules and use-phase rules.

Ultimately driving creator consistency in a Product Carbon Footprint (PCF) approach across the industry.

The outcome? A consistent approach that empowers the industry to evaluate the environmental impact of ad with more clarity, allowing media buyers to understand their impact, so they can plan and optimize with the environment and performance in mind.

Even better, is that it can also be used to better identify emission hotspots and reduction opportunities within supply chains.

In fact, other industries are already taking the lead. Excel Dryer led a project to develop [a global PCR](#) that standardized how the environmental impact of hand dryers was measured. It teamed up with industry leaders (and competitors) World Dryer and Fast Dry to define standard industry metrics of measuring dry time and energy use, so that consumers could easily compare similar products. With industry consensus, every product is assessed and reported in the exact same way, leveling the playing field

3 Develop a collaborative product carbon footprinting approach to identify carbon reduction opportunities focused on the cause and effect relationships across the digital advertising network

Understanding the carbon footprint of online products and services is complicated. They rely on a complex network of data services that make it hard to understand the exact cause and effect of their emissions. In a nutshell, it makes it trickier to clearly identify the best opportunities to influence and reduce emissions of the digital product.

Engaging academic researchers, LCA practitioners and industry groups to create an actionable and credible industry roadmap will mean better industry decision-making on how to reduce the impact of hosting, delivering and viewing digital ads.

Especially for systems as complex as the internet and data networks,

where actions can have different effects in the short and long term, and understanding these possible outcomes is key to good decision making in reducing carbon emissions for online products and services.

For example, Fairphone's recent [life cycle assessment](#) proved that keeping a phone for at least five years and replacing or repairing parts significantly reduces its environmental impact, as most emissions happen during production. This makes it clear to the smartphone industry (as well as customers) where to focus investment and future resources to have the biggest influence on reducing their impact.

4 Evaluate the industry as a whole and its role on the path to net zero emissions

Even though calculating the impact of digital ads is a work in progress, it's clear that the environmental impact of hosting, delivering and viewing a digital ad is only a piece of the full advertising ecosystem. To make real-world change, we need to look at how we produce the ads, but also the products we advertise and the environmental impact they have.

Advertising has an important role to play on the path to global net zero emissions. It's one of the best communication tools we have, and when used properly and consistently, has the power to inspire the world's most influential audiences towards products, services and behaviors that can reduce their impact on the environment.

The Carbon Trust points out our achievements and ambitions to use advertising as a force for good, such as bold [advertising policies](#) and accessibility requirements, and prompts us to further explore how we can inspire other industry peers to take comprehensive climate action.

As we are actively engaged in ongoing industry discussions related to advertising, we can further explore using our position to support client's advertising strategies in a way that inspires them to take comprehensive climate action.

WeTransfer Advertising policies



Respect consumers rights—not create false expectations of an unhealthy lifestyle.

Comply with the law—all marketing communications should be legal, decent, honest and truthful.

Promote conscious buying—it should not abuse the trust of consumers or exploit their lack of experience or knowledge.

Respect human dignity—it should not incite or condone any form of discrimination, including that based upon ethnic or national origin, religion, gender, age, disability or sexual orientation.

Prohibited categories—fossil fuel, fur, tobacco, gambling and gun companies are no-nos.



Looking ahead


We're motivated to inspire others
to join us on this journey

We're committed to:



Increasing the accuracy of how we measure CO2 emissions per impressions

We'll refine our carbon-counting strategy as estimating digital and analogue carbon emissions improves. This means creating unique measurements for the different ad types that we support, including the country where the ad is shown to reflect the emissions factory of each country's energy grid. We've outlined these in more detail in the methodology section.



Driving more collaboration across the digital supply chain means engaging every client, partner, and platform that plays a role in delivering a WeTransfer ad.

WeTransfer is already working hard to build valuable partnerships across various sectors. We're teaming up with researchers, suppliers, technical experts, and customers to reduce emissions, pioneer new paths, craft bespoke solutions, and spark inspiration. Our collaborative ethos is all about empowering our partners to make measuring their footprint a top priority and taking meaningful steps to reduce it. We're in it for the long haul, keeping the conversation going and sharing our knowledge across industry groups like DIMPACT, Ad Net Zero, B Corp, Creatives for Climate, and Leaders for Climate Action.

How we got our numbers: summary of methodology, scope and digital supply chain

Find the full methodology in the appendix

Transparency is key to driving the media industry forward

In digital advertising, collecting, measuring and reporting data and CO2 emissions is relatively new. The lack of a regulatory body and set measurement models is what we believe is holding back the ability to analyze data and ultimately, the full fledged adoption of reducing emissions.

Our journey involves heeding the wisdom of The Carbon Trust's Gap Analysis Key Findings. It's rightly pointed out that existing carbon accounting methods often fall short in identifying the most impactful strategies to slash real-world carbon emissions. WeTransfer is on board with its recommendations, collaborating with the industry to pinpoint these game-changing strategies. As detailed in the Key Findings from the Gap Analysis, the Carbon Trust notes that the current methodologies used in carbon accounting do not provide a way to identify the most appropriate levers to support ensuring actions lead to real-world reductions in carbon emissions. WeTransfer is following their recommendations to work with the industry to correctly identify these levers.

Transparency is key to driving the media industry forward, so, WeTransfer has published the methodology we follow to measure and report the full climate impact of serving a wallpaper on wetransfer.com.

The calculation of use-phase emissions per impression of a wallpaper is based on the [DIMPACT Methodology](#), using an attributional life-cycle assessment approach, which aims

to align with the GHG Protocol Product Standard and draws upon the GHG Protocol ICT Sector Guidance.

DIMPACT currently (by default) looks at use-phase emissions only, not the 'embodied emissions' of things like servers and user devices. This is because: (a) The data is more readily available and generally higher-quality (but we plan to work with data center partners to include this data in their customer sustainability reports); (b) we understand that embodied emissions of internet networks and user devices are out of scope for WeTransfer when accounting for our Scope 3 footprint.

This approach involves mapping the functional processes in the delivery of digital media content (the processes considered in-scope are outlined below) and then parameterizing each of these processes.

Once WeTransfer identified the processes, we gathered and input the necessary data for the DIMPACT Assessment tool.

WeTransfer commits to conducting an annual review at the start of each calendar year, and we'll complete a fresh assessment to include the latest data.

Outline of DIMPACT Assessment Tool

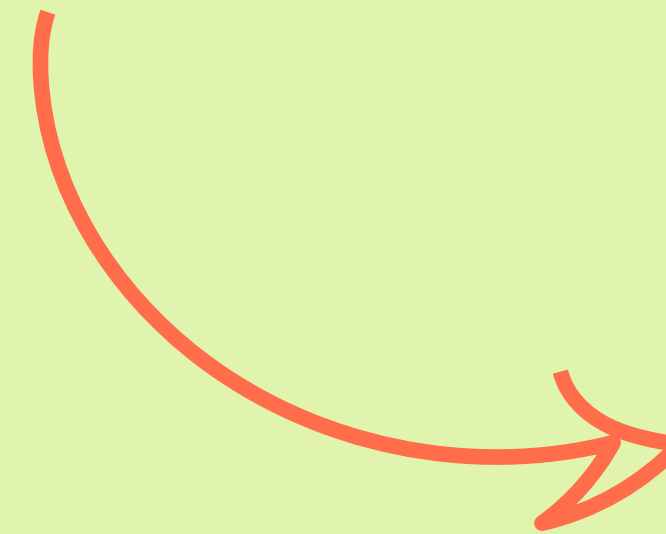
DIMPACT offers typical 'architecture diagrams' that outline the typical process for publishing - which serves as the scope of the assessment. These diagrams serve as a checklist for companies to compare against their own architecture, ensuring all relevant in-scope processes are accounted for in the calculation.

For each in-scope process within scope, DIMPACT supports companies to engage with their service providers to gather emission estimates through a standard data request form.

DIMPACT collects company-specific data on user behavior, including information on devices used, time spent, number of sessions/impressions, and data volumes transferred.

The DIMPACT tool also provides default proxy values for estimation, including:

1. Default values for user device consumption (developed by the University of Bristol).
2. Default values for internet networking intensity (both fixed and cellular, based on academic studies).
3. Default values for Content Delivery Network usage.
4. Once the data is entered into the DIMPACT tool, the tool performs an assessment and generates figures for energy consumption and CO2e (carbon dioxide equivalent).



Mapping WeTransfer's digital supply chain and boundaries

The major principles that defined the scope of the boundary are:

Emissions per impression

We're all about shedding light on the environmental footprint of delivering ads or campaigns to end users' devices. Our mission? To empower our clients with insights on how they can actively reduce emissions from their digital ads. This could include aspects like optimizing file sizes, making thoughtful choices between direct and programmatic approaches, and keeping tabs on trackers and more. As a proud [climate-neutral certified organization](#), WeTransfer takes the full responsibility of calculating, measuring, and setting emissions reduction targets for all our business operations. No need for our advertising clients to include these emissions from our business operations as part of their campaign emissions, we got it.

Partners in WeTransfer's Digital Supply Chain

Now, let's zoom in on our biggest partners within WeTransfer's digital supply chain who are key players from the moment that final content gets uploaded until it appears onto a user's device screen. This is our chance to join forces with these partners and make a dent in emissions. We've already started sharing our best sustainability practices, advocating for more transparency, and championing standardization. As we continue on our journey, we will include more of our partners in the scope of the assessment

Active View Time

And then, there's the concept of "active viewing time." We're not just looking at when users gaze upon an ad on WeTransfer. We're considering everything from data transmission to server energy usage and even end-user device power consumption until the user clicks on the ad to a new page. When it's not in the spotlight, we fairly allocate the device's energy consumption to the website or app currently holding the user's attention.

There are four main lifecycle stages: Production Development Phase, Distribution and Storage Phase, Network Transmission, and Consumer Use Phase. Each stage represents a set of processes that in completion deliver a digital ad to the end user's device.

1. Production Development Phase

- Begins with the final ad creative being packaged and uploaded into Content Storage (known as S3 Content Storage).

2. Distribution and Storage Phase

- Campaign metadata and configuration details, such as target countries, number of impressions, and ad ranking, are sent for handling by the Ad Manager partner.
- Ad analytics tools provide WeTransfer with essential data on page views, including percentages of views by country, active time on the page, and impressions per page view.

- Engineering Analytics plays a crucial role in real-time error reporting, performance monitoring, and observability stack management. It alerts the engineering team to critical availability issues.
- The majority of ad delivery occurs within WeTransfer's AWS infrastructure, where WeTransfer has control over activities executed by AWS.
- The Ad Management utilizes auto-scaling Kubernetes clusters to adapt server usage to traffic demands.
- Static assets are served through WeTransfer's S3 content delivery network (CDN).
- The AdSDK, a compact JavaScript bundle, is deployed to the CDN and embedded in platforms where ads are displayed.
- The AdSDK communicates with the AdProxy, which is the backend of WeTransfer's ad infrastructure.
- The AdProxy requests an ad from the Ad Management system, which makes the decision on which ad to display.
- The AdSDK renders the ad, retrieving assets from WeTransfer's Ad Creative storage on S3.

3. Network Transmission

- The creative content departs from WeTransfer's servers and traverses a content delivery network to enable faster loading by distributing static files closer to the user's location.

4. Consumer Use Phase

- The final leg of the digital supply chain takes place at the user's end – their router bridges the gap, delivering the internet connection needed to display the ad, whether they're on a desktop or laptop.

A Note on Boundaries: File Transfer as a Complementary Product

The file transfer aspect is considered a complementary product of delivering an ad impression on wetransfer.com, for two reasons:

1. Initialization and Component Loading:

For that ad to render and count as an impression, our Transfer App needs to jump into action, initialize itself, and load all its components onto the webpage.

2. Server Emissions Integration:

Right now, measuring the energy and emissions from AWS servers for both file transfer and ad delivery separately isn't as clear-cut as we'd like it to be. We're

working hard to create separate measurements, but for now, we're taking a holistic approach and considering the entire server footprint including file transfer and ad delivery.

For the nitty-gritty details about our scope and collection data, check out the full methodology in [the appendix](#).

Appendix

Our notes on measuring CO2 emissions per impressions



83kg CO2 emissions per
1,000,000 impressions

This metric represents an average value for ads shown worldwide, based on WeTransfer's 2022 data. Currently, WeTransfer uses a single measurement for all ad types. We are actively working on improving it to better match and measure the creative of each wallpaper. It's the most accurate estimate based on the data available to us and the wider industry. And what our clients can use to start better measuring and understanding their emissions.

WeTransfer is committed to improving the measurement, as detailed in the methodology, and the calculations will be adjusted as more accurate data becomes available. We're also committed to doing our part in reducing emissions, removing greenhouse gasses, and encouraging our partners in the supply chain to join us on this journey.

The scientific community and industry has yet to reach broad consensus measuring emissions from digital products and services.

Right now, there's a number of different data sources, calculation methods, and media carbon calculators that exist. Some of these methods are pretty high-level. They estimate how much energy the whole internet uses, including all your devices, in kilowatt-hours (kWh). They also estimate how much data zips around the internet in gigabytes (GB). Then, they

mash those numbers together to get a simple kWh per GB ratio. But here's the twist: it's a bit of an oversimplification because it doesn't really capture the diversity of data center workloads, the different types of ads, or the wide range of devices in the digital world.

In the absence of standardization, things can get a bit tricky. Inconsistent parameters make it hard to compare claims and measurements on an even playing field. We're committed to fostering collaboration that leads to a unified approach to carbon accounting and transparent calculation methods. It's our way of striving for a shared industry solution.

Full Methodology

This is where we get into the fine details on how exactly we calculate emissions per impressions. We cover how WeTransfer collaborated with DIMPACT to leverage [its methodology \(Version 1.0\)](#) and assessment tool, and mapped our digital supply chain to serve and develop our own methodology for the calculation of an impression.

At a high level, DIMPACT is an initiative of media and technology companies that has come together to understand and measure the greenhouse gas (GHG) emissions of serving digital media and entertainment products. The initiative includes a web-based calculation tool that allows participants to measure these emissions using a standard Methodology.

It's heavy stuff, but it's important.

1. WHAT WETRANSFER IS DOING TO ADDRESS EMISSIONS FROM ITS DIGITAL ADS

WeTransfer is introducing CO2 emissions per impression in all campaign reporting aimed at helping clients to measure the emissions of their campaigns, report more accurately on their carbon footprint, and identify reduction opportunities in their digital media placements and campaigns.

The first step is making all clients aware of their emissions, so they are able to measure the footprint of campaigns with WeTransfer. And, together, take the next steps to meaningfully address it.

Objectives of Study

The goal of this study is to calculate the CO2 emissions per impression of an ad on wetransfer.com and provide this information to WeTransfer's advertising clients, enabling them to understand, measure and address emissions from their digital advertising campaigns. This information will help clients make more informed decisions on indirect emissions from advertising campaigns and address/reduce their environmental impact.

Definition of Product

A WeTransfer ad is a creative image displayed on wetransfer.com. This image is loaded when a user visits wetransfer.com and the creative is held, then rotated, based on the media buy package.

For the purpose of this study a WeTransfer ad is defined with the following attributes:

- Average of all ad types: WeTransfer offers a range of ad types including static images, interactive hover, click to play videos, cinemagraph and games.
- Device types: laptop and desktop (with monitor)
- Single measurement for all ads served globally
 - Future assessment will aim to provide measurements based on the country that the ad is delivered in.

Definition of Functional Unit

The functional unit is the service of hosting, delivery and viewing of all advertising impressions globally on WeTransfer.com in the calendar year 2022.

From this unit of analysis, we can calculate the average emissions intensity estimate per 1,000 impressions.

Note that producing the creative assets for these impressions is excluded from the boundary of this model. For comparison, it is determined that the functional unit of the emissions from content creation would be: “The emissions from producing the creative assets for a given advertising campaign.” This is a different functional unit to that outlined in this study.

It is also suspected that the emissions from creating content will vary significantly depending on the choices of the client when procuring an agency to create the campaign. It is assumed that very few of these choices would have an impact on the functional unit of this study.

The major principles that defined the scope of the boundary are:

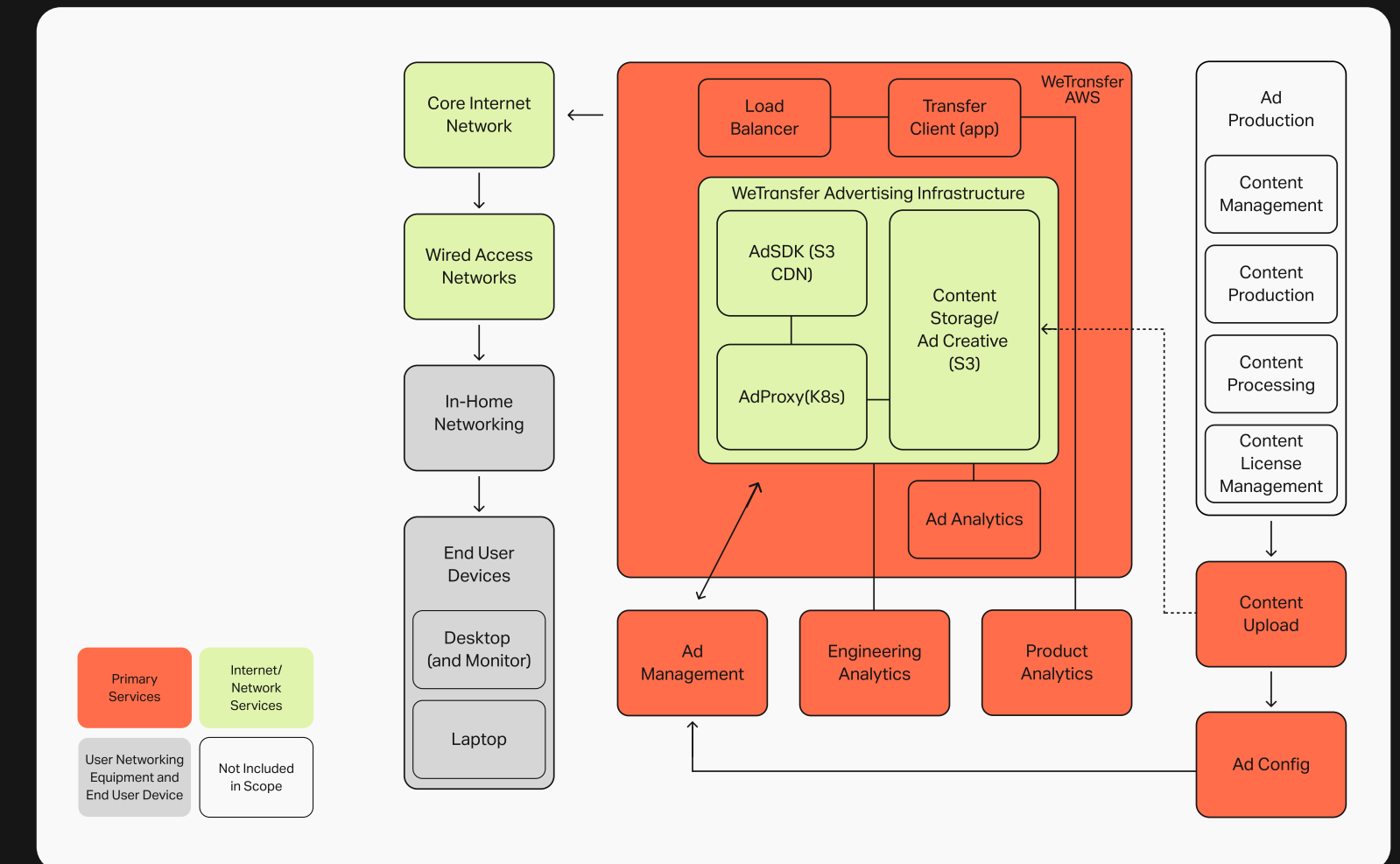
- The emissions per impression calculation is to provide the client information on the emissions created in delivering their ad/campaign to an end user’s device. The aim is to highlight the areas where clients have influence in reducing

emissions in the digital supply chain, such as file size, direct vs. programmatic, trackers and more. As a [climate neutral certified organization](#), WeTransfer takes responsibility for calculating, measuring and setting/achieving emissions reduction targets for all activities associated with business operations. WeTransfer advertising clients are not responsible for addressing these emissions as part of their campaign.

- Map all the partners in WeTransfer’s digital supply chain that play a significant role from final content being uploaded to being displayed on a user’s device. This provides an opportunity for WeTransfer to work with our partners to reduce emissions, such as sharing best practices and advocating for increased transparency and standardization.
- Define the time that the user is viewing the ad on WeTransfer. Data transmission, server energy usage and end-user device power once the user clicks through to the ad link. When not in the active view, the energy consumption of the device would be allocated to the website/application that is in active view.

MAP OF DIGITAL SUPPLY CHAIN

There are four main lifecycle stages: Production Development Phase, Distribution and Storage Phase, Network Transmission, and Consumer Use Phase. Each stage represents a set of processes that in completion deliver a digital ad to the end user’s device.



The digital supply chain begins when the final ad creative has been created, packaged and then uploaded into Content Storage (named S3 Content Storage) and served through the Cloud Front Content Delivery Network (CDN).

The campaign meta data and config such as target countries, number of impressions and rank positioning (the order the ads are shown) are sent over to be handled by the Ad Management Partner.

Then the ad analytics tools provide WeTransfer with the information on page views including: % of views by country, active time on page, impressions per page view.

Engineering Analytics runs real time error reporting, performance and monitoring. This is part of the observability stack and alerts the engineering team to critical availability issues.

The majority of the ad delivery happens within the AWS infrastructure. WeTransfer has operational control over the activities executed by AWS. The Ad Server is a mix of auto scaling Kubernetes clusters that allows WeTransfer to scale the server usage to the demands of the traffic.

We serve all static assets through our S3 content delivery network (CDN). The AdSDK is a small JavaScript bundle deployed to our CDN. This is embedded in any platform where ads are shown. The AdSDK talks to our AdProxy, which is the backend of the ads infrastructure. The AdProxy requests an ad from the Ad Management system which makes the decision of which ad to show. The AdSDK renders the ad, retrieving assets from our Ad Creative storage on S3.

The creative leaves WeTransfer's servers and travels across a content delivery network that allows the ad to load faster by spreading the static file delivery closer to where the user is located.

The user's router provides the internet to display the ad on the end user's device (desktop or laptop). This is the final stage of the digital supply chain to deliver an ad.

Note on Boundaries

File Transfer as separate (complementary) product

The file transfer aspect is considered a complementary product of delivering an ad impression on wetransfer.com, for two reasons:

1. For an ad to render and an impression to count, Transfer App needs to initialize and load its components into the page.
2. Currently, the amount of energy and emissions from AWS servers associated with file transfer and delivering an ad can not be measured separately. Therefore, WeTransfer uses the entire footprint of the servers and is working on creating separate measurements for file transfer and ad delivery.

For this study, the emissions of anything related to file transfer, upload, download and storage are not being submitted for product carbon footprint verification or review.

2. REVIEW SCOPE AND COLLECT DATA FROM PARTNERS TO INPUT INTO DIMPACT ASSESSMENT TOOL

See Overview of Data Collection for details on data sources, metrics, assumptions and areas of improvement.

Below is a list of the items and processes considered in our emissions calculation for serving WeTransfer ads.

The digital supply chain to serve a WeTransfer ad is defined with the following scope:

- Data from January to December 2022
- Data Center (AWS) processes used to store, serve and analyze ads (and file transfers)*
- Including the Ad Decision Requests and emissions from major partners involved in ad delivery, including Ad Server and Ad Engineering
- User engagement on the platform including number of impressions per session, impressions by country breakdown, and active time spent on site, provided through Ad Analytics tools
- Internet network transmission for delivering ad content to users
- An attribution of in-home networking, such as modem routers) required for users to access ad content
- Default countries in the tool are selected based on existing DIMPACT users customer base
- Energy consumption of end-user desktop and laptop devices whilst the ads are in active view

*AWS data includes all server usage (file storage, transfer and serving ads). WeTransfer plans to improve this measurement by gathering emissions/energy consumption only for serving ads.

Calculation does not include

As explained in the principles above, the following items were excluded from the scope of the digital supply chain to deliver an ad.

- Operational energy consumption of WeTransfer’s ad related teams (e.g. offices, laptops, business travel, employee commuting)
- Emissions associated with file transfer and other WeTransfer services*
- Emissions from ad production (e.g. shooting and editing of advertising media assets)
 - This was excluded as ad production has a different ‘functional unit’ to the serving of these ads. For example, ad production would not scale in the same way as the emissions from the impressions for viewing those ads.
- Data transmission, server energy usage and end-user device power once the user clicks through to the ad link (which was deemed to be outside the boundaries of this assessment)
- Embodied emissions of servers, internet network equipment and consumer devices. These were excluded for the following reasons:
 - For servers and internet networking equipment, the ICT Sector Guidance published life cycle life cycle ratios (use-phase vs embodied emissions) of server and network equipment.
 - For server equipment the use-phase made up a significant proportion of the emissions (see Table A1.13 - Chapter 2).
 - For servers, WeTransfer used primary data from the use phase, which meant that data quality was high. However, the providers of this data (AWS) did not include embodied emissions in their measurement. Therefore these were excluded.
 - For consumer devices, the GHG Protocol ICT Sector Guidance, Chapter Six provides a detailed overview of measuring the impacts of software (the most applicable chapter of this document). However, WeTransfer notes that a discussion of allocating embodied emissions is excluded from this chapter, and therefore assumes that for a software product, the embodied emissions should be excluded. Through DIMPACT, WeTransfer will seek clarity on the validity of this assumption, in order to understand if this should be included.
- Other minor suppliers to WeTransfer’s ad service, such as analytics services (assumed to be computationally light, therefore de minimis)
- Energy consumption of end-user devices when WeTransfer ads are not actively viewed (considered minimal, though further testing could confirm).
- Energy consumption of ads on mobile and tablet devices, as WeTransfer did not serve ads on these devices during the reporting period. This will be reviewed in future assessments, if this changes.

Cut-off criteria

This methodology aims for completeness. However, there may be instances where quantitative data are not available and where it is deemed that significant effort is required to gather data that has an immaterial impact on the product carbon footprint. In these instances, WeTransfer has developed a cut-off criteria to determine whether the process can be excluded:

- Primary or secondary data, or usage data, is not available for the process in question; and
- An initial conservative estimation of the process suggests that excluding the process will have less than 2% impact on the total expected footprint.
- The total estimated emissions processes that meet the above “cut-off” criteria does not impact the overall product footprint by over 5%.

For any processes excluded, this shall be included within the footprint report, as well as the estimation method documented. Note that this cut-off criteria differs from the system boundaries, such that the boundaries determine whether the process is included in the footprint. The cut-off criteria is used to determine whether in-scope processes can be excluded based on the above.

3. INPUT DATA INTO DIMPACT ASSESSMENT TOOL

In order to convert the input data into the DIMPACT tool, we have created an Excel tool that performs this operation. This forms the 'backup' to the DIMPACT model runs, and shows the working behind the DIMPACT model inputs.

The metrics required to be converted from raw output from WeTransfer's internal systems included:

- Total number of sessions
- Average data volume per session (page view - as per DIMPACT terminology)
 - This required WeTransfer to convert the impressions per session numbers into average data volume per page view
 - Impressions per session were very high, as ads load even when the page is not in active view.
 - The spreadsheet multiplies the number of impressions per session by the average data volume per impressions (source internally from WeTransfer), to calculate the total data volume.
- Average emissions factors
 - The DIMPACT tool offers the input of emission factors for selected countries (based on major markets where DIMPACT participants have historically been placed).
- Therefore WeTransfer needed to come up with a weighted average emissions factor to input into the 'Rest of the World' entry field, as well as the percentage (%) of page views in each country, based on the Ad Analytics data (discussed below).
- For this assessment, the [International Energy Agency](#) (IEA) emissions factors for 2022 were used. Note that these figures for 2022 are actually from 2020, due to the lag in reporting. It is WeTransfer's policy to use the most recent year of IEA data available. WeTransfer will continue to review available factors, in order to improve temporal data quality in the future.
- Data volume per household
 - Data is required to allocate CPE (that's carbon per engagement) to a given service, based on data volume per household per month.
 - This data is only available for certain countries (you can find the specifics in the [DIMPACT Methodology Appendix](#)).
 - For places where this data isn't readily available, WeTransfer used an estimated weighted average. This was based on the user profiles of our WeTransfer community.

- Ad Manager and Ad Engineering attribution
 - Covered in the section below.

In addition, the Excel tool to gather and document all data inputs into the system. It was a handy reference point for the assessment, offering insights outside of the tool itself.

4. RUN DIMPACT ASSESSMENT AND REVIEW RESULTS

Once the input data has been entered into DIMPACT, the total emissions for the reporting period is calculated. The DIMPACT tool allows annotation of inputs, so that the inputs can be traced to the Excel calculation. As a policy, WeTransfer users must provide annotation to all inputs in the DIMPACT tool.

This provides the total emissions for the reporting period.

- The total emissions (location-based) estimate calculated
- Based on the total number of impressions

This makes it possible to understand the share of emissions per impression, represented by storage, uploading and downloading of data, the use of media or the loading of an ad.

OVERVIEW OF DATA COLLECTION PROVIDED BY WETRANSFER, INCLUDING ESTIMATES AND ASSUMPTIONS

Reference DIMPACT methodology for calculation methodologies, emissions factor sources, justifications of assumptions

WeTransfer reviewed the data fields in the DIMPACT assessment tool, and collected/entered data for the following fields. Additional calculations were carried out in the Excel Sheet titled: DIMPACT - WeTransfer - Carnstone Analysis - 2022 v2

DATA CENTER

Ad Management Services

Source: via AWS. Based on WeTransfer's proportion of partner's total Ad Decision Requests (ADR) over the year.

Logging and Monitoring Services

Source: Emissions from Ad Engineering partner. Primary data was not available, so a spend-based method has been used.

Other Services

Source: Emissions from AWS. This is placed in 'other services' as includes all WeTransfer processes that currently can be broken down into the above data center processes.

NETWORK INFRASTRUCTURE

Fixed Line Network

Source: Weighted average used, based on number of impressions per country.

USER DEVICES

Customer Premises Networking

Source: Weighted average for impressions.

Computers

Source: Ad Analytics data.

Amazon Web Services (AWS)

Date range: January-December 2022

Data source: Primary - AWS's

[Customer Carbon Footprint tool](#)

Key Metrics: CO2 emissions from WeTransfer's Cloud Workloads

AWS provide two key metrics as part of their emissions:

- 'AWS emissions' for WeTransfer (including renewable energy savings - ie market-based emissions)
- 'Emissions saved' from AWS's renewable energy (RE) sourcing
- The above includes WeTransfer's use of AWS's content delivery network (CDN)

Allocation approach and effect on interpretation of footprint results:

- In this study, there is no disaggregation of ad delivery vs. other file transfer services. The footprint provided by AWS includes all WeTransfer workloads with AWS - not just those required to serve ads. At this stage WeTransfer doesn't have a granular view of which workloads are for serving Ads, and which are for file transfer and other WeTransfer features. Therefore, the emissions associated with serving an ad is very likely overestimated as the majority of workloads and energy from AWS servers is used for transfer services.

Assumptions and uncertainties:

- The current version (2023) of the AWS Customer Carbon Footprint tool provides Scope 1 and Scope 2 emissions, but not Scope 3 (which can be estimated as a significant portion of emissions). As WeTransfer has adopted a location-based approach, we have assumed that the location-based emissions are simply the 'AWS emissions' + 'emissions saved from RE'. Finally, whilst the team had confidence that AWS were applying a robust approach to measuring and allocating emissions to their customers, we were not able to view a detailed methodology document that outlines their approach. As such, this data was taken 'as is'.allocating emissions to their customers, we were not able to view a detailed methodology document that outlines their approach. As such, this data was taken 'as is'.

- The emissions from AWS also include the energy/ associated emissions with running WeTransfer’s mobile application. However, this study exclusively addresses ads on desktop and laptops.

Plans and opportunities for improvement in calculation:

- Many of the technical processes required to deliver an ad are done using workloads on cloud infrastructure - either controlled by WeTransfer or with strategic partners. An area of opportunity is to tag AWS cost usage to better isolate ads-specific infrastructure. This can split out specific usage for serving ads versus other WeTransfer functions, including file transfer, upload, download and storage.
- AWS has announced that the [Scope 3 emissions](#) will be made available in early 2024. A new assessment will be completed when a full year of data is available. In addition, WeTransfer’s platform (server architecture) teams have set up [Cloud Carbon Footprint](#) to use as an additional dashboard to compare emissions with the AWS dashboard. Over time, the aggregated data in Cloud Carbon Footprint will provide us more insights into Scope 1, 2 and 3 emissions for our full server usage and we can make an informed decision on which metrics to use for the next assessment.
- WeTransfer has already made significant progress in addressing emissions from the server usage. In 2022,

WeTransfer partnered with AWS, and took a hard look at how much carbon we were emitting. We prioritized two paths to execute while saving costs and reducing emissions. For WeTransfer, this meant optimizing how we stored files and ensuring that autoscaling was enabled. WeTransfer is committed to addressing further emissions and finding ways to optimize our server user, to continue to reduce the environmental impact of our cloud storage. Read more about this in [WeTransfer’s 2022 Responsible Business Report](#).

Ad Management Partner

Date range: January-December 2022

Data source: Primary

Key Metrics:

- Partner’s AWS emissions (AWS’s [Customer Carbon Footprint tool](#))
- % of total Ad Decision Requests (ADRs) from WeTransfer as a proportion of partner’s total ADRs - to attribute AWS emissions estimate.
- 2021 CO2 footprint (most recent available)

Allocation approach and effect on interpretation of footprint results:

- As this partner was able to provide the percentage of ADRs specifically from WeTransfer, it was possible to achieve a more accurate estimate of the amount

of their server emissions related to serving an ad on wetransfer.com.

Assumptions and uncertainties:

- It is assumed that this partner’s AWS footprint relates to their entire server operations. WeTransfer has received verbal confirmation of this. WeTransfer have excluded emissions from this partner’s employees that work on the ad server for WeTransfer, as they are a small, office-based company, and it is suggested that this is de minimis.

Plans and opportunities for improvement in calculation:

- Further engage partner to tag their server instances, so that they are able to provide a specific footprint for WeTransfer, as the energy intensity of one ADR may vary between their customers.
- Understand partner’s own footprint (Scope 1 and 2) in more detail, to understand its significance if this was included.
- To reduce emissions down the digital supply chain, the WeTransfer platform team is sharing learnings and best practices from work to reduce server costs and emissions.
- In addition, we have assumed that partner’s own operation emissions allocated to WeTransfer is de minimis.

Ad Engineering Partner**Date range:** January-December 2022**Data source:** Estimated

- After engaging with the Ad Engineering Partner, they were unable to provide us with primary data. WeTransfer therefore used a spend-based approach to estimate the emissions from this supplier. We used environmentally extended input-output (EEIO) factors to complete this. WeTransfer used the [US Environmental Protection Agency \(EPA\)](#) factor for Software. WeTransfer also sense-checked this against the [UK's Department for Business, Energy & Industrial Strategy \(BEIS\)](#)^{*}, emissions factor, which was similar but gave a slightly lower result. Therefore we used the EPA factor.

Key Metrics:

- Emissions based on euro (EUR) spend in 2022

Allocation approach and effect on interpretation of footprint results:

- As outlined above, WeTransfer did not receive primary data from the Ad Engineering Partner, therefore it was not needed to allocate based on a usage metric. WeTransfer used a spend-based metric for allocating emissions based on industry averages. This is explained further in the data source and assumptions section.

- Assumptions and uncertainties:
 - Spend-based methods are typically significantly lower in certainty, as it is not supplier or geographically specific. However, as these emissions are low, WeTransfer has accepted this estimate for the purposes of this assessment.

Plans and opportunities for improvement in calculation:

- Continue to request specific usage from WeTransfer services from Ad Engineering Partner to increase transparency and accuracy in calculation.
- Encourage and work with Ad Engineering Partner to gather GHG emissions reports from their data center providers, and develop a way to attribute to WeTransfer based on server usage (as per Ad Server partner) or another activity metric.

Ad Analytics (Traffic)**Date range:** January-December 2022**Data source:** Primary from WeTransfer teams**Key Metrics:**

- Active time on page (engagement time)

Assumptions and uncertainties:

- The key uncertainty around this Ad Analytics data is how 'time on page' is measured and whether this is accurate, especially whether the time on page includes only time

when the user has the site on page.

- In addition, this provider may not accurately measure, or filter out, non-human users on the site (such as bots and crawlers). However, this issue was mitigated by the fact that WeTransfer uses Ad Analytics data (which is linked to ad tracking and billing) to understand the total number of sessions, and only used GA to estimate active time on page.

Plans and opportunities for improvement in calculation:

- The Data Analytics team has an upgrade from Universal Analytics to Google Analytics 4 on the roadmap, which calculates additional metrics which is likely to provide more clarity on time on page.

Ad Analytics (dataset used for User Devices input)**Date range:** January-December 2022**Data source:** Extracted by WeTransfer AdTech team**Key metrics:**

- Number of sessions per country (used to calculate the user time on page)
- Number of impressions per country (used to calculate the emissions per impression, and data volume transferred).

^{*}BEIS has been replaced by Department for Energy Security and Net Zero, Department for Science, Innovation and Technology, and Department for Business and Trade

Uncertainties:

- Overall, WeTransfer is highly confident that the Ad Analytics data is accurate. This is because this data is used to bill clients based on the number of impressions, and the data collection approach is compliant with advertising industry standard (IAB).

Emissions Factors

Data source: International Energy Agency (IEA) Emissions Factors 2022

Date range: 2020 (year that the IEA emissions data relates to)

Key metrics:

- Carbon intensity of electricity generation (CO2e)
- To clarify, the DIMPACT team calculated the CO2e figures by summing the emissions / kWh for CO2, CH4 and NO2 for each country.

The DIMPACT tool provides input of custom emissions factors for selected countries, and a ‘rest of the world’ input. Using the IEA data, we calculated a custom figure for this field, using a weighted-average figure based on the number of sessions. This is discussed in more detail in the section above.

For the internet transmission networks, there is a single input field to convert the electricity consumption of this process to CO2e emissions. We conducted a similar weighted

average calculation based on impressions (as impressions were commensurable with data volume).

Assumptions and uncertainties:

- The IEA data is generally seen as good practice for reporting, but the ‘temporal lag’ of this data is an uncertainty, as they don’t give clarity on the emissions intensity of electricity consumption in the reporting year
- However, IEA covered a majority of countries where WeTransfer has users, therefore gave strong geographical coverage.

End-user Device Power Data

Date range: N/A

Data source: DIMPACT analysis

Key Metrics:

- Typical power consumption of end-user devices (desktops & laptops)
- Typical power consumption of CPE
- Proportion of laptops to desktops

Assumptions and uncertainties:

- The major area of uncertainty is determining the actual devices and setups that users are using (desktop vs. laptop with monitor), as internal data from WeTransfer on this was not available. As such, the DIMPACT defaults were used (see discussion in the DIMPACT methodology on these defaults).

- The user device profile (what devices users are using to access WeTransfer) currently are fixed globally, therefore it does take into account differences between countries (e.g. it wouldn’t take into account if more users use desktops in France than in India). This is because there is a lack of data to get this information at the country level - especially with a global user base.

Plans and opportunities for improvement in calculation:

- WeTransfer to explore whether any tools are available to get a better understanding of what devices are being used to access content.
- Update the list of countries to the most relevant for WeTransfers based on users.

Through DIMPACT, conduct a review of default power consumption data as new information becomes available on the installed base.

SUMMARY ON CHALLENGES IN COLLECTING TRANSPARENT DATA FOR INITIAL CALCULATION

This assessment is the first of its kind for WeTransfer and still developing in the digital advertising industry. As such, challenges were encountered when gathering data - or matching consumption and emissions directly to WeTransfer's ads. In these cases, WeTransfer has made some simplifying assumptions or proxy metrics in order to reach our initial assessment.

WeTransfer worked with a third party (the Carbon Trust) to review and assess the measurement for transparency and credibility. In addition, WeTransfer is publishing the methodology to make it clear that this is an initial calculation, being clear of the assumptions that were made, and laying out a call for feedback and wider industry action to increase transparency and standardization where possible.

The first need for more transparency is with suppliers within the ad industry. WeTransfer was very pleased with the willingness to help from several key suppliers. However, these providers were not yet set up to provide detailed emissions data that disaggregated the data center workloads from their other clients from WeTransfer's workload.

WeTransfer and DIMPACT, working with the cloud providers can play a role in sharing best practice and specifying

a roadmap for suppliers to provide this information in a standard way - so that it's recognised amongst the industry, and becomes a streamlined process that requires minimal resource from suppliers every time this is requested.

Another challenge and area for improvement is the attribution of end-user device energy. As mentioned above, the end-user device energy is based on active time on page - not the total number of impressions served (which would include end-user device energy when the user is doing something else on their device - this energy is attributed to another service unrelated to this assessment). Note here that the data transfer from serving all impressions is included in the assessment. This means that all impressions in this assessment have a uniform carbon cost. However, WeTransfer knows premium ads that are delivered first are more likely to be on the active screen, thus should arguably have a higher carbon cost than ads that are more likely not seen.

A more granular view of which ads are shown during Active view time would mean that different campaigns could have their own unique carbon footprint (not based on a uniform per impression value). To enable this would require enhanced measurement of engagement and ad views. WeTransfer is aware of potential commercial sensitivities around the rate at which impressions are actually viewed, so we recommend further investigation to explore if this is built into ad pricing before publicly reporting this information.

Authors and acknowledgements

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To everyone behind this report.

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About WeTransfer and WeTransfer Advertising

WeTransfer streamlines the workflow process for millions of creative professionals. Its ecosystem of creative productivity tools makes it easy to collaborate, share and deliver work. WeTransfer has more than 80 million monthly active users in 190 countries.

As a certified B Corporation™, WeTransfer has long been a champion of using business as a force for good. Since its founding in 2009, WeTransfer has donated up to 30% of its advertising space to support artists and social causes. Last year, WeTransfer also launched its Supporting Act Foundation to support emerging creative talent through arts education, grants, and an annual prize.

About DIMPACT

DIMPACT is a collaborative initiative between leading media, entertainment and technology companies and world-class researchers. Part tool and part community, DIMPACT has been developed with cutting-edge expertise from computer scientists at the University of Bristol, and is convened and delivered by Carnstone, a sustainability consultancy based in London.

Created to measure, understand and ultimately reduce the emissions of serving digital media and entertainment products, DIMPACT's web application takes the complexity out of calculating the carbon emissions of delivering digital media and entertainment products.

DIMPACT's community of organizations started at nine but is now made up of over twenty companies from across the media, entertainment and technology sectors, all with an interest in working to reduce their digital emissions and bring transparency to consumers, business, and the sustainability community.

About The Carbon Trust

The Carbon Trust is a global climate consultancy driven by the mission to accelerate the move to a decarbonised future. Climate pioneers for over 20 years, it partners with businesses, governments and financial institutions to drive positive climate action.

From strategic planning and target setting to implementation and communication, The Carbon Trust turns ambition into impact. To date, its 400 experts have helped set over 200 science-based targets and guided more than 3,000 organizations and cities across five continents on their route to Net Zero.

Core Definitions

Advertising Management

Processes involved in selling and managing advertising inventory, managed by Ad Ops team and carried out by Ad Server.

Ad Analytics

Processes used to provide feedback, dashboard and analysis of advertising performance, including impressions.

Ad Config

This includes ad position information, ad platform (desktop, mobile web, mobile app) the location and file paths to the Ad Creative and campaign metadata such as target countries.

Ad Server Services

This includes all of the infrastructure to render, track, monitor and display our ads.

Ad Production

This references the WeTransfer Studio department that creates the ads. This includes designers creating assets, engineers creating html/js/css or copywriters producing content.

Ad Proxy (K8s)

“K8s” is a shortened term for “Kubernetes” [K + 8 letters + s]. We run our Ad Proxy in a K8s cluster which is part of our main

AWS infrastructure. This is the real time production backend system which communicates with the Ad Management system and delivers the data for the AdSDK to render the ad.

Active View

The amount of time that the page is within view by the customer. This means, if a user switches window or tab on the browser, the active time would be paused to give WeTransfer an understanding of how long users are actually viewing an ad (as measured by Google Analytics).

Content Delivery Network (CDN)

A network of interconnected servers that speeds up webpage loading for data-heavy applications. This is carried out by AWS and referred to as AdSDK (S3 CDN).

CDN Origin and Caching Services

Processes that provide origin content for a CDN service or caching service for WeTransfer servers. This is carried out by AWS.

Climate neutral certified organization

WeTransfer has removed as much carbon dioxide from the atmosphere as they put into it. Each year they present progress to a certified third party auditor that they are working to reduce and eliminate the greenhouse gas emissions from running the business as much as possible, and compensate for all of the unavoidable emissions through certified carbon offset schemes.

Cradle to Gate Model

A partial life cycle analysis model that assesses a product’s environmental footprint from raw materials extraction (cradle) until it leaves the factory-“gate”. (i.e. before transported to the consumer).

Cradle to Grave Model

Full life cycle analysis from resource extraction (‘cradle’), production, use phase and disposal phase (‘grave’).

Content License Management

Processes involved in managing content licensing for the service.

Content (and Metadata) Management Services

Content management systems and content processing involved in management of content and any specific metadata management about that content (illustrated in the system diagram).

Content Processing

Processes involved in receiving and processing content for ingestion to the service.

Content Storage (Ad Creative)

Media and content storage independent of Content Management (e.g. video, images, pdf documents, etc.). This is carried out by AWS (S3).

Content Upload

This includes all processes involved in bringing content and data into the service and any editing prior to or as part-of ingestion processes. This is executed through AWS (S3).

Embodied Emissions

All greenhouse gas emissions that are released as part of making a product or service ready for your consumption or use. In the case of a digital ad, an example is the emissions generated from building a functional server including extraction of metal, transportation to factory and construction of server building.

Engineering Analytics

Used for real time error reporting, performance and monitoring. It is part of our observability stack and alerts the engineering team to critical availability issues. This is carried out by the Ad Engineering Partner.

Life Cycle Analysis (LCA)

The systematic analysis of the potential environmental impacts of products or services during their entire life cycle. The complete process of LCA includes goal and scope definition, inventory analysis, impact assessment, and interpretation.

Load Balancing

These services enable adaptation to variations in demand. This is carried out by AWS (Cloudfront) and the Content Display Network (CDN).

Page View

An instance of a user visiting a page on WeTransfer.com. This is slightly difficult to define as WeTransfer is a single page service. For example, if a unique URL changes, such as /corporate or /corporate/about/ that is classed as two different pages. There are some nuances when we have advertising features such as sliding panels and overlays.

Product Analytics (User Analytics)

The process of analyzing how users engage with an ad. The process of providing metrics to show how many users engaged on WeTransfer and behavioral data, such as time on site.

Product Carbon Footprint (PCF)

A measurement of the total greenhouse gas emissions generated by a product, from extraction of raw materials, to end-of-life. It is measured in carbon dioxide equivalents (CO₂e).

Product Category Rule (PCR)

Category-specific guidance for estimating and reporting product life cycle environmental impacts, typically in the form of environmental product declarations and product carbon footprints.

Scope 3 Emissions

All other indirect emissions that occur in the upstream and downstream activities of an organization.

Session

A browser session from start to finish. For example, a user who visits wetransfer.com and starts clicking around. A session will span actions across multiple pages on the site (as measured by Google Analytics).

Transfer Client (App)

This is the section of the site that handles the actual transferring of files. For an ad to render and an impression to count the Transfer App needs to initialize and load its components into the page.

Web Hosting

Used to host and serve web pages and content for assessed service(s). In this case WeTransfer ads. This is carried out by AWS (S3).

Viewable Impression

A viewable impression is a standard measure of ad viewability defined by the International Advertising Bureau (IAB) to be an ad, which appears at least 50% on screen for more than one second. The standards used by WeTransfer are the IAB standards for viewability, which are verified using measurement service, and this data is also collected via Ad Analytics tool.

Other definitions can be found in our most recent responsible business report (Jargon Buster): <https://wetransfer.com/blog/story/making-a-difference-together/>

Inquiries

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