sharethrough

Understanding How the Programmatic Supply Chain Generates CO_2 Emissions

Browsing the internet and digital ads release carbon waste into the environment. As more companies seek to become carbon neutral, they need to keep track of what's generating the most CO_2 waste. With so many moving parts in ad tech, it can be tricky to determine a company's biggest contributors to carbon emissions. By placing ourselves in the shoes of the average consumer, we can get a better look at what causes the carbon emissions generated throughout the supply chain.

The Difference Between Scope 1, 2 and 3 Emissions

SCOPE 1

Emissions are generated by a company's facilities and any vehicle they own.

Companies can reduce their **Scope 1** emissions by switching to more energy efficient facilities or vehicles.

SCOPE 2

Emissions are generated by energy required to run those facilities and vehicles.

Companies can reduce their **Scope 2** emissions by switching to renewable energy sources.

SCOPE 3

Emissions are harder to calculate, as they're generated indirectly by a company's supply chain.

To get a better understanding of **Scope 3** carbon emissions, let's take a look at an average day in ad tech.

Scope 3 Emissions Account for Over 90% of an Organization's CO_2 Waste

User Visits Website

Whether they use a phone, laptop, or any other device, the data transmission and processors between the user and the publisher's servers generate Scope 3 emissions.

DID YOU KNOW?

60% of people were unaware browsing the internet generates carbon emissions.[1]

Website Sends Ad Request to the Supply-Side Platform (SSP)

While the webpage is loading for the user, the data transmission, processors and servers working to send the ad request to the supply-side platform (SSP) from the publisher (website) simultaneously create Scope 3 emissions which are invisible to all players on the programmatic supply chain.

Ad Request → SSP

SSP Sends Bid Request to the Demand-Side Platform (DSP)

SSP → Bid Request → DSP

Bidding for ad space on the Open Web is not harmless. In fact, industry-wide components like Header Bidding and Open Bidding, network requests between multiple SSPs and DPS all contribute to Scope3 emissions in the programmatic supply chain.

Let's take a look at how many CO_2 emissions have been generated so far.

SCOPE 1	1.6%
SCOPE 2	1.6%
SCOPE 3	30%

DID YOU KNOW?

The process of creating a banner ad generates Scope 3 emissions, from brainstorming the campaign to designing the ad itself. All of this happens before the campaign is actually delivered.

Advertiser Sends the Ad to the Demand-Side Platform (DSP)

Now comes the time to chose the right ad for the right target audience. The type of content determines the amount of carbon waste it produces, with image-based display ads producing less Scope 3 emissions than video. The higher the file size, the more the processors and networks have to work to send the ad.

DSP

DID YOU KNOW?

1 million ads generates the same amount of carbon emissions as one round-trip flight from Boston to London for one person![2]

Boston → London

DSP Sends the Ad to the Supply-Side Platform

DSP → SSP

Once the right ad is selected for the user impression, the data transmission and CPU usage cause Scope 3 emissions.

SSP Sends the Ad to the Publisher

SSP

As the whirring fans try to cool down the servers, Scope 3 emissions are generated by the processors and data transmission from the SSP sending the ad to the publisher.

DID YOU KNOW?

A majority of consumers believe brands can have a bigger impact than governments in creating a greener future.[3]

Website Displays the Ad to the User

Once the user's session is over, the ad performance data makes its way from the publisher to the brand through the SSP, DSP, advertiser and other partners and vendors in their programmatic supply chain, creating carbon waste.

Let's take a look at how many CO_2 emissions have been generated so far.

SCOPE 1	3.2%
SCOPE 2	3.2%
SCOPE 3	60%

DID YOU KNOW?

80% of consumer prefer brands that are actively working to reduce their carbon emissions.[4]

All of This Happens in Less Than **400 Milliseconds**

Sending Ad Performance to the Advertiser

Once the user's session is over, the ad performance data makes its way from the publisher to the brand through the SSP, DSP, advertiser and other partners and vendors in their programmatic supply chain, creating carbon waste.

At the End of the Day...

An average day in ad tech has billions of impressions, so we can see how digital advertising increases a consumer's carbon footprint by **28%**, according to Purpose Disruptors, and how Scope 3 emissions make up over **90%** of a company's carbon waste.

SCOPE 1	4.8%
SCOPE 2	4.8%
SCOPE 3	90%

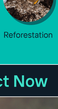
Things to Consider

By optimizing the supply path, brands can reduce their carbon emissions since there are less steps for the impression, ad and performance to take throughout the programmatic supply chain.



Lowering Scope 3 Carbon Emissions

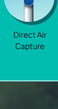
Until now, there wasn't a viable solution for advertisers and brands to ower their impact on the environment. That's why Sharethrough partnered with Scope3 to create Green PMPs. An industry-first initiative to offset carbon emissions from digital advertising by funding high-quality carbon removal projects like reforestation, carbon soil storage, and direct air capture.



Reforestation



Carbon Soil Storage



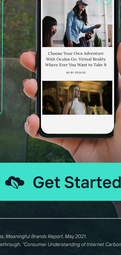
Direct Air Capture

We Must Act Now

sharethrough ○○○ SCOPE3

Decarbonize the Programmatic Supply Chain With Green PMPs by Sharethrough

Sharethrough launches Green PMPs, part of the initiative to decarbonize digital advertising with Green Media Products in partnership with Scope3, becoming the first SSP to offer media with net zero carbon emissions.



The Green icon identifies advertising creatives that are delivered through a supply path neutralized via carbon removal projects.

Let's Work Together to Build a Clean Media Ecosystem

Get Started →

[1] Source: Sharethrough, "Consumer Understanding of Internet Carbon Emissions", May 2022
[2] Source: EPA, Greenhouse Gas Equivalencies Calculator, March 2022
[3] Source: Havas, Meaningful Brands Report, May 2021
[4] Source: Sharethrough, "Consumer Understanding of Internet Carbon Emissions", May 2022