



REPORT

# Cloudflare Emissions Inventory – 2021

September 22, 2022

# Emissions Inventory

The following represents Cloudflare’s comprehensive global greenhouse gas (GHG) emissions inventory for the calendar year 2021.

Cloudflare’s calculations were prepared in accordance with the GHG Protocol [Corporate Standard, Greenhouse Gas Scope 2 Guidance](#), as well as ISO 14064. The following inventory results were independently reviewed and verified by [Sustainable Business Consulting \(SBC\)](#).

Emissions Category		Carbon Dioxide Equivalent (CO <sub>2</sub> e) in Metric Tons (MT)	Percent of Calculated Total
Scope 1		134	100
Scope 2 (Location-based) <sup>1</sup>		15,488.03	100
	Facilities	874.03	5.64%
	Network	14,614	94.36%
Scope 2 (Market-based) <sup>2</sup>		0	100
Total (Market-based) <sup>3</sup>		0	100

1. Location-based emissions reflect the average emissions intensity of grids on which energy consumption occurs.

2. Market-based emissions reflect emissions from electricity that an organization has purposefully chosen. For more information on Cloudflare’s renewable energy purchases, see Renewable Energy and Offset Purchases.

3. Total (Market-based) emissions include Cloudflare’s 2021 verified offsets and renewable energy purchases.

# Methodology

Cloudflare defined its organizational boundaries using the control approach, and included all of its global operations.<sup>4</sup> Cloudflare Scope 1 emissions resulted from certain Cloudflare facilities that use combustion fuels for heating purposes. For those facilities, Cloudflare estimated its emissions using the average intensity method based on energy use intensity (EUI) factors provided by the [US Energy Information Administration](#).

Cloudflare's Scope 2 emissions are derived from its purchased electricity. Cloudflare elected to subdivide its Scope 2 location-based reporting into its facilities and its network to further aid in transparency and comparability.

Activity data for the Cloudflare global network was collected on a monthly basis from each of the points of presence (PoPs), which are located in more than 270 cities in 100 countries around the world.<sup>5</sup>

Activity data at Cloudflare facilities was measured in two ways.<sup>6</sup> All facilities for which Cloudflare had access to electrical utility information reported actual usage. For facilities that did not have access to actual usage data, Cloudflare used the average intensity method based on energy use intensity (EUI) factors provided by the US Energy Information Administration.

All activity data was converted into emissions via grid average emissions factors. Emissions factor sources included the US Environmental Protection Agency, UK DEFRA, and the International Energy Agency (IEA).

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4. Cloudflare's organizational boundaries do not include Cloudflare's China network partners, which are not under Cloudflare's operational control.  
5. Cloudflare's network energy data includes compute and networking hardware under Cloudflare's operational control. The calculations do not include energy used to power data center facilities (which house PoPs) not owned or controlled by Cloudflare, nor any other equipment colocated in such a facility. Cloudflare's approach is based on guidance provided by [BSR and the Future of Internet Power](#).  
6. Cloudflare facilities refers to Cloudflare-controlled office space.

# Renewable Energy and Offset Purchases<sup>7</sup>

Cloudflare’s market-based Scope 2 emissions are zero for 2021 as a result of the company’s renewable energy and offset purchases. Cloudflare purchased renewable energy attribute certificates (I-RECs, RECs, REGO, and others), through its partner [3Degrees](#), equivalent to Cloudflare’s global facilities and network energy usage. All purchases were consistent with [RE100 technical criteria](#).

Cloudflare purchased energy attribute certificates consistent with RE100 geographic criteria in all cases where such products were available. To that end, in 2021 Cloudflare purchased renewable energy in countries including the United States, Canada, the United Kingdom, the European Union, Brazil, Chile, India, Colombia, Malaysia, Thailand, Turkey, Vietnam, Morocco, Singapore, Nigeria, Uganda, and South Africa.

However, given the geographically distributed nature of the Cloudflare network, several countries where Cloudflare consumed energy had no renewable energy product available. In such cases, Cloudflare purchased equivalent products in the same region, or in the case of certain island nations, Verra-certified offsets.

Cloudflare also procured Verra-certified offsets to account for its Scope 1 emissions.

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7. Sustainable Business Consulting’s (SBC) review did not include Cloudflare renewable energy purchases. SBC’s attestation is limited to Cloudflare’s carbon emissions calculations.

Cloudflare  
Attn: Patrick Day  
101 Townsend St  
San Francisco, CA 94107

Sustainable Business Consulting  
3409 California Ave SW, Suite C  
Seattle, WA 98116

July 2, 2022

Dear Patrick,

Sustainable Business Consulting (SBC) is pleased to provide an independent and impartial verification of Cloudflare's 2021 Greenhouse Gas (GHG) inventory. SBC has provided 15 years of sustainability consulting services and is a Certified B-Corporation and a CDP Accredited Provider. SBC used ISO 14064-part 3, 2nd Edition, 2019-04, to conduct a limited assurance verification. This letter is to clarify matters set out in the assurance report. It is not an assurance report and is not a substitute for the assurance report. This letter and the assurance report, including the opinion(s), are solely for Cloudflare's benefit. SBC consents to the release of this letter but without accepting or assuming any liability on SBC's part to any other party who has access to this letter or assurance report.

This verified emissions report encompassed Cloudflare's operations for the 2021 calendar year, January through December 2021. Cloudflare reports GHG emissions using an operational control approach encompassing global operations including offices and data centers. The company assessed emissions for Scope 1, direct emissions, and Scope 2, indirect emissions. Scope 3 emissions are excluded. Included emissions are as follows:

- Scope 1 Emissions: Direct emissions associated with natural gas used to heat offices.
- Scope 2 Emissions: Indirect emissions associated with purchased electricity in offices and co-located data centers.

The verification confirms the accuracy and completeness of the information provided to substantiate Cloudflare's 2021 GHG emissions reporting. Cloudflare's total reported emissions are 15,622.03 MT CO<sub>2</sub>e. Verified emissions by scope are as follows:

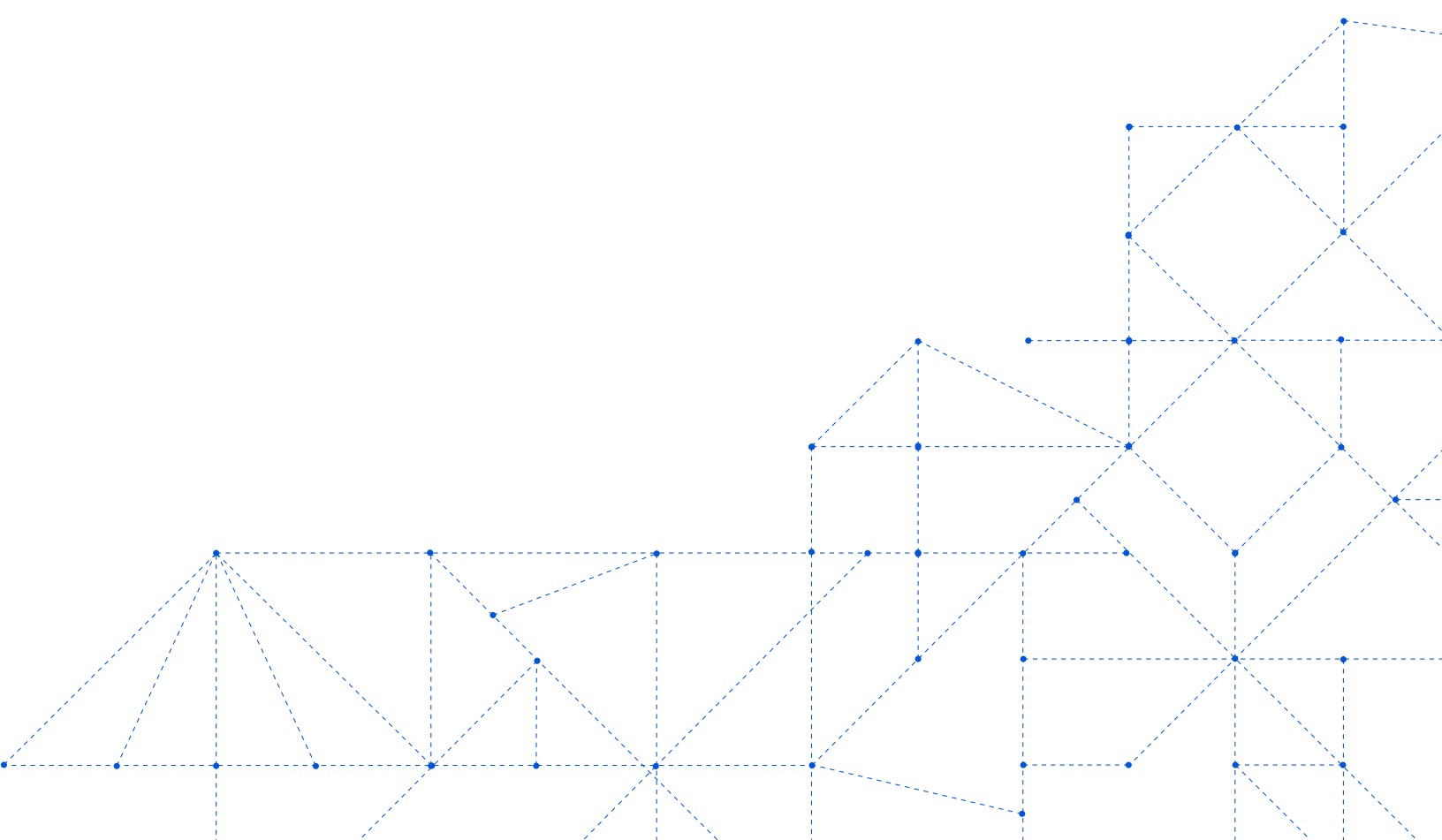
- Scope 1: 134 Mt CO<sub>2</sub>e
- Scope 2: 15,488.03 MT CO<sub>2</sub>e (location based)

SBC has found no evidence that Cloudflare's 2021 GHG emissions reports or data were incorrect, as everything was found to be presented fairly and in accordance with stated criteria in line with the GHG Protocol Corporate Accounting and Reporting Standard and the ISO 14064 Standard.

The verification statement is signed by a Lead Verifier and Peer Reviewer. The Verifier and Peer Reviewer have a combined 30 years of experience in Sustainability Consulting.

Courtney Blann, Lead Verifier  
(MBA Strategy and Sustainability, MPS Data Analytics)  
July 2, 2022

Ruth Lee, Peer Reviewer  
(BA, Community, Environment Date & Planning)  
July 2, 2022





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