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Big Tech's green promises are hypocritical gestures

By Nick Dyer-Witheford and Alessandra Mularoni ⋮⋮ 23/04/2025

This article is an edited excerpt from *Cybernetic Circulation Complex: Big Tech and Planetary Crisis,* published in February 2025 by Verso Books.

The rise of Big Tech has coincided with intensification of the world market's greatest and potentially most catastrophic failure: global warming. More than half of all CO2 emissions generated by human activity since 1751 were produced after 1990, when digital devices began to be spread around the world.

Digital technologies are generally regarded as a 'wild card' in the planet's thermal fate. Crucially, scientific knowledge of global warming depends heavily on computing. Computation also helps us to replace travel with screen-time conferences, create energy-monitoring 'smart homes' and 'smart cities', navigate electric cars, and build 'smart' electrical grids which orchestrate interplays between solar, wind and hydroelectric sources.

At the same time, the industry's own carbon emissions depend on the amount of energy expended in using, making and disposing of computing technologies, and on whether the source of that energy is fossil-based or renewable. The metrics and methods for arriving at these measurements vary; studies can produce dramatically different results.

As of the early 2020s, the Information and Communication Technologies (ICT) sector was responsible for only between 2.1 and 3.9% of global greenhouse gas emissions. Yet studies suggest that the energy demands of global networks are likely to accelerate sharply because of the inclusion of micro-computing into everyday appliances, cryptocurrency speculation, and the expanding use of artificial intelligences (AI).

One estimate calculates that the 1.5 million AI servers the company Nvidia plans to ship by 2027 will use at least 85.4 terawatt-hours of electricity annually – more than is consumed by many small countries. If ICT greenhouse gas emissions remained constant at 2020 levels while all other economic sectors reduced theirs at the rate recommended by the Paris Agreement to stay within a 1.5-degree rise in global temperatures, the sector would account for 35% of emissions by 2050.

This challenge has posed special problems for Amazon, which in 2018 emitted more than 44 million metric tons of carbon – about 85% of the total emissions of Denmark or Switzerland. This is due not only to its warehouses and cloud-computing centres, but especially to the vans, trucks and planes in its 'arriving today' delivery infrastructure.

In May 2019, fifty Amazon workers – Amazon Employees for Climate Justice – presented the company's shareholder meeting with a letter signed by thousands of their co-workers. It called on Amazon to achieve zero emissions, limit fossil fuel companies' use of cloud services, and stop funding climate-change-denying politicians and lobbyists.

The proposal was rejected. Amazon CEO Jeff Bezos refused to meet the protesters, but subsequently announced Amazon would address climate issues gradually, aiming for net-zero carbon emissions by 2040. In September, 900 unimpressed Amazon workers pledged to leave their desks at the company's Seattle headquarters to join Greta Thunberg's global Climate Strike. The following year Bezos, realizing he had to up his PR game, donated $10 billion to ecological charities, but a chorus of critics suggested that he instead clean up Amazon faster, and pay more taxes so that governments could take effective action on climate change.

When Amazon revealed its 2021 pandemic business surge had resulted in CO2 emissions 18% higher than in 2020, and 40% more than in 2019, the spirit of revolt was revived. In May 2023, hundreds of Amazon workers gathered at its Seattle headquarters protesting both the lack of progress on climate goals and an inequitable return to on-site working. This time the demonstration was held in front of the 'Amazon Spheres' – three connected glass orbs crammed with more than 40,000 plants from fifty countries on five continents, with lighting, temperature and humidity carefully controlled to mimic an equatorial 'Amazonian' environment: precisely the type of environment being destroyed by global warming. Protesters carried signs reading 'Amazon: Enough short-term thinking. Listen to your Employees: Stop Greenwashinezos's fellow digital oligopolists, unencumbered by a carbon-spewing transportation fleet, could afford to be more ambitious about the climate crisis. Indeed, they seized the opportunity to situate themselves at the forward edge of green capitalism. Google has long declared itself carbon-neutral because it purchases 'offsets', supporting carbon-capturing ventures such as forestry preservation to compensate for its own fossil-fuel use. In 2020, its CEO, Sundar Pichai, announced his company would use only renewable energy by 2030. He also asserted that Google had purchased enough carbon offsets to 'pay off ' the entire carbon footprint accrued since its foundation in 1998.

Microsoft upped the ante with what it called a 'moonshot' plan to become carbon negative, extracting more carbon from the atmosphere than it emitted by 2030. Apple announced a plan for carbon neutrality by 2030. In 2021, Facebook claimed to have already attained net-zero carbon emissions for its immediate business operations through massive buying of renewable energy and carbon offsets; the company aimed to do the same for emissions across its supply chain by 2030.

These initiatives drew applause, but also scepticism. Carbon offsets of the sort Google and Facebook rely on heavily for their net-zero claims have been criticised for lacking thorough auditing and verification procedures. Recent investigations go as far as to characterise the vast majority of carbon-offset plans as 'worthless'.

Microsoft's carbon-negative 'moonshot' includes payment for reforestation and biomass preservation, but also depends on development of carbon-capture technologies that do not currently exist, or have yet to be tested at scale. In 2023, President Brad Smith had to reveal that, since the company's moonshot announcement, emissions, far from shrinking, had climbed steeply. Booming corporate growth had driven them up by 29 per cent, to reach 14 million tons of CO2 – the highest in five years.

A 2023 study of transparency and integrity in climate pledges from twenty-five major firms, conducted by Corporate Climate Responsibility Monitor, includes four of the five Big Tech companies (Meta is absent). Apple received the best rating, of 'moderate' or 'reasonable' integrity, although its long-time contractor, Foxconn, was among the lowest-rated companies. Google and Microsoft received 'poor' integrity ratings – Google because it supplied no evidence about the effectiveness of its carbon offsets, and Microsoft

because the 'implementation scale' of its 'innovative new abatement technologies' was unclear. Amazon fell to the bottom the heap; Bezos's promises were panned for their vagueness and inadequate reporting. The record of the giant tech companies in realising their lofty green promises therefore seems uneven; actual achievements contrast sharply with hypocritical gestures.

Behind the calculation of emissions accruing to individual companies is a larger problem: that of their role in global capitalism as a whole. In our new book, we argue that a 'cybernetic circulation complex' of tech companies exists in today's world market to automate, expand and accelerate the exchange of commodities for money – through advertising, logistics, shopping, payment and financing. Since these companies function as conduits for goods and services flowing through the world market, from suppliers operating at very different technological and regulatory conditions, their involvement with carbon emissions massively exceeds what can be directly attributed to them.

Under the Greenhouse Gas Protocol Initiative, widely used to evaluate emission reductions, there are three 'scopes' of emissions. Scope 1 emissions are from sources directly owned or controlled by a company. Scope 2 primarily covers emissions from purchased energy sources. Scope 3, however, is vague and vast, including 'indirect emissions' resulting from the transportation, distribution and use of goods and services purchased from a company, as well as those resulting from its investments and finance. The definition and discovery of scope 3 emissions is confusing and opaque, and many corporations would prefer that it remain so. While it is relatively easy for some giant companies to limit their scope 1 and 2 emissions (or at least pretend to do so through carbon offsets), increasing profits and stock values relentlessly raises scope 3 emissions.

For example, digital marketing companies now scrupulously calculate the carbon footprint of advertising campaigns run via Google and Facebook's high-speed automated auctions. Yet such accounting does not even touch on the role of advertising in sustaining a culture of high-intensity consumption. The UK group Purpose Disruptors argues that to take responsibility for its climate impact, the advertising and marketing communications industry needs 'to not only measure the impact of its operational emissions but also 'measure and reduce the impact of the incremental consumption it generates'. The group claims that if a measure of 'advertised emissions' included the greenhouse gas emissions resulting from 'the uplift in sales generated by advertising', the industry would be responsible for 32% of the carbon footprint of every person in the UK.

In another example, according to the Center for Investigative Reporting, Amazon's reported, and already dismal, carbon footprint massively underestimates its emissions. The company only reports emissions generated through the use of goods it makes itself, such as the Echo Dots, Kindles and Amazon Basics – 1% of its online sales. It omits emissions from products that Amazon buys from manufacturers (such as Levi's, Nintendo, Frigidaire) and sells directly to the customer, which represent 39% of its total sales, or from the other 60% of sales from third-party vendors. Other retailers far smaller than Amazon report such emissions, giving them a far larger carbon footprint; but Bezos's giant corporation suppresses this information.

It may be possible to track and even curtail the cloud and platform services that Microsoft, Amazon and Google provide to fossil-fuel companies such as Shell; but this tells us nothing about how their cloud computing accelerates the activities of hedge-funds and asset managers who funnel money towards oil. The sector's real climate change problem is that it is predicated on the circulatory growth of the world

market. In theory, this expansionary commodification might proceed with entirely clean, renewable energy decoupled from carbon emissions – but such a green capitalism must also tend to other aspects of Earth's ecosystem, such as biodiversity.

In a system where greenhouse gas emissions are deeply embedded in industrial systems, from factory farming to skyscraper construction, the abatement of such emissions appears as an ever-receding mirage. Global capital as a whole is failing to curb global warming, and the cybernetic circulation complex is an indispensable part of the overheating system.

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