
AI Greenwashing? A Comparison of AI Companies' Environmental Policies and Actual Impact

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Abstract

Environmental scientists have been researching and quantifying the negative environmental impact of AI systems for years. Simultaneously, cognizant of the need for good press and consumer concern about environmental impacts of their technologies, companies that specialize in various forms of AI development (CAIDs) self-publish their environmentally friendly plans to “go carbon neutral” or dedication to “sustainable development,” sometimes accompanied by reports about their own energy consumption, water consumption, and pollution generation. The purpose of this paper is to gather those two information points in one place and frame them side by side, the better to highlight discrepancies between what is happening and what AI companies say is happening. This research is comprised of a literature review and a comparative policy analysis study. In presenting both components in one place, I will investigate and clarify the potentially performative, or “Press Release Ethics” (PRE) nature of CAID environmental claims; that is, I will identify greenwashing practices in AI company publications and policies.

1 Introduction

This paper relies heavily on the concept of CAIDs and AI PREs. CAIDs are “companies that specialize in various forms of AI development,” and PREs are “Press Release Ethics,” including “AI companies' practice of making reassuring ethical claims in their policies then backtracking later on” [1]. The value of PREs to CAIDs is substantial. Many consumers have considerable doubts about adopting AI products in their lives [2]. Since CAIDs have expended enormous sums of money developing those products, it is critical for them to overcome customer and regulator hesitation in order to cultivate market share. There is a “grueling week-to-week contest for AI market share and mindshare” [3]. Consumer-hooking, rival-crushing speed, amplitude, and growth are apparent necessities for survival in the increasingly crowded AI sphere. The physical requirements those concepts engender, such as massive data centers, have mixed effects on the environment. The focus of this work is PREs as they relate to the environmental impact of CAIDs; specifically, mineral extraction, energy usage, freshwater consumption, and pollution generation. In order to identify potential PREs in this context, I combine a literature review with a comparative policy analysis study, comparing CAID reports with information provided by other groups such as environmental scientists and journalists. In highlighting contrasts in the content provided by these disparate sources of information, I highlight and categorize environmental PREs in CAIDs.

1.1 Environmental Context (Greenwashing = Environmental PREs)

Greenwashing and AI PREs are integrally linked in ideology and definition. A literature review of definitions of greenwashing concluded that across many studies, “All ... authors describe the phenomenon as two main behaviors simultaneously: retain the disclosure of negative information related to the company's environmental performance and expose positive information regarding its

environmental performance... it's two-folded behavior" [4]. That "two-folded behavior" is clearly referenced in the definition of AI PREs:

PREs are characterized by two phases. In Phase 1, companies make public ethical reassurances regarding AI applications (to appease the public). In phase 2, those companies quietly backtrack on those reassurances (to minimize harm to the company's development and profitability). [1]

"Minimizing harm to development and profitability" is an understandable goal for companies operating in capitalistic markets. But profits and growth increasingly require the exploitation of environmental resources. Consumers are human beings who may, despite slick tech company marketing campaigns, still look askance at business conglomerates that use up massive quantities of finite natural resources and pollute the planet. As such, greenwashing is an expedient business practice. The eventual fallout is rarely suffered by the perpetrators, as shown by environmental justice research [5]. PREs are at work in companies with "public-facing moral principles and behind-the-scenes hypocrisy" [1], which fits comfortably with the main criticism of greenwashing: "Many companies have taken to publicizing environmentally conscious goals while continuing to take part in environmentally detrimental actions behind the scenes" [6]. With this connection established, I will provide examples of environmental PRE practices.

1.2 Greenwashing and technology companies

Researchers have identified greenwashing practices in tech companies including HP, Dell, Apple, Microsoft, Nokia and Samsung [7]. But there are relatively few articles identifying greenwashing in the context of AI. Researchers identified a gap in the literature for this topic using bibliometric mapping [8], but did not supply specific information on the topic itself. Others have demonstrated the issue with a philosophical lens that does not encompass interpretation of company policy or identification of cases in which those policies have been violated [9]. Amazon and Google have been called out for greenwashing [6], but not in relation to their development of AI. CAIDs have been identified as engaging in "ethics washing" [1], but that research did not address the environmental component of CAID actions. The lack of research directly linking AI companies and greenwashing tactics provided the rationale for this paper.

2 Greenwashing and AI companies

I divide this environmental impact analysis into five sections comprised of the environmental policies and practices of five CAIDs chosen for their broad name recognition in the AI sphere: Microsoft, OpenAI, Amazon, Google, and Meta.¹ All of these companies are considered to be "hyperscalers," with "large-scale data centers" and massive computing power [10].

In this study, environmental PRE analysis is comprised of four sub-sections: Rare Earth Element (REE) and mineral extraction, energy usage, water consumption, and pollution. These sections are closely interrelated: mineral extraction results in significant pollution, electricity generation requires burning coal, and high energy use requires increased water consumption and generates greenhouse gas emissions. In the interest of being as specific as possible, however, I keep the four sections disparate when feasible. For a brief literature review of each environmental impact domain in the context of AI development, please see Appendix B.

Some of the information in this paper is sourced from CAID sustainability reports. Several CAIDs admirably publish these reports each year. They are not, however, without their issues:

Many companies release corporate social responsibility reports... intended to promote positive environmental and social change. However, ... these reports are self-published and largely unverifiable third parties... [and] act more as an advertisement for stakeholders than a realistic agenda of corporate priorities. Greenwashing allows companies to appear socially aware to stakeholders while avoiding substantial changes to their business or revenue models. [6]

¹ See Appendix A for a note on separating individual CAIDs. xAI, Anthropic and Palantir analyses were cut for brevity.

I have attempted to glean information from as many sources as possible for this analysis to complement the potentially dubious nature of CAIDs' self-published reports: articles from environmental science journals, investigative journalism pieces, academic research, and more.

2.1 Microsoft

Microsoft has a website entitled "Accelerate sustainability with AI: Embracing innovation for a better world" [11]. The company also publishes an annual "Sustainability Report" and accompanying "data fact sheet," emphasizing their "meaningful progress [and] commitment not only to meeting our climate goals but ... to build a more sustainable future" [12].

REEs - PREs: Regarding Rare Earth Elements (REEs) and other mineral extraction, Microsoft does not articulate its own policies. Rather, via press releases, they direct the public's attention to their investments in companies that seemingly have a more direct impact on reducing the environmental damage done when extracting REEs. In their 2025 Environmental report, Microsoft boasts about another investment:

Cyclic Materials is revolutionizing the way we approach circularity by enabling the continuous reuse and recycling of critical minerals, reducing waste and environmental impact, and enabling supply chain resilience. By repurposing rare earth elements and base metals at the end of their life-cycle, valuable resources are not lost but instead re-enter the production cycle. [12]

Interestingly, the people writing Microsoft's 2025 sustainability report chose the present progressive tense ("*is revolutionizing, enabling, recycling, reducing, enabling*"). But there is no mention of "minerals," "mining," or "rare earth elements" (or "Cyclic Materials") in the accompanying Data Fact Sheet [13], which indicates that the company has not yet logged any reportable data on this front, despite claiming that they are currently enabling the recycling of critical minerals in the larger report. That may be because, according to Cyclic Materials' own press release, that company is scheduled to open its first commercial facility in 2026 ("We are excited to begin commercial operations in the U.S. in early 2026" [14]).

Why are processes and benefits from a company that will begin commercial operations in 2026 listed in Microsoft's sustainability report from 2024? Undoubtedly, it takes multiple years to put together such a large project. The underlying ideology, proof of concept, and smaller scale test facilities have been in development for years, so they can and perhaps should be described in present tense rather than future. But here, a CAID wrote a check and then included Cyclic Material's benefits to the environment on the CAID's current environmental report, which is misleading. Claiming that REE recycling is already underway when the recycling facility has not yet begun commercial operations fits the description of PREs. It is unclear what Microsoft is doing within the purview of its own company to address REE issues. The absence of terms like "minerals," "mining," or "rare earth elements" in the sustainability report's Data Fact Sheet indicates that the company does not have further initiatives in place beyond investing in third party companies.

Energy Usage – Neutral: From 2020 to 2023, Microsoft's energy use doubled. In 2025, the company's electricity demands jumped "over 25% for the second year in a row" [15]. But the company had a ready answer for critics: "100 percent of our electricity consumption, 100 percent of the time, [is] matched by zero carbon energy purchases by 2030" [16]. The controversial nature of the carbon credit system is described in appendix B. Microsoft acknowledged in its "Electricity Policy Brief" [17]: "In the context of a global climate crisis, it's problematic that today's electricity demand is met in large proportion with fossil fuels. The continued use of carbon-emitting resources will only intensify the consequences of climate change." While touting its zero carbon energy purchases, the company has also turned its sights to different energy sources. Microsoft is one of at least three CAIDs to hedge its electricity dependence on nuclear energy. While the safety of nuclear energy is debated [18], its use results in drastically lower greenhouse gas emissions when compared to traditional electricity [19]. Specifically, Microsoft will "purchase power from [a] plant in Pennsylvania, where the worst nuclear accident in U.S. history took place ... The site shut down ... in 2019 but plans to reopen for this project" [20]. That opening will complement the company's other nuclear investments [21]. Microsoft has massive power demands, heavy reliance on carbon

offset programs, and big investments in potentially dangerous nuclear energy. But to date, their reporting and press releases have not diametrically opposed the reality of their practices. There is no ample evidence of PREs found in this category.

Water consumption - PRE tendencies: Microsoft's website on water sustainability [22] includes some of the expected generic, feel-good statements about environmental protections as they relate to water consumption. "Water is one of the most vital resources for our planet, sustaining life, industry, and agriculture. However, as the global population continues to grow, so does the demand for water." Interestingly, that last statement indicates that the culprit for increased water demands is a growing population, i.e., individual people in the world, not Microsoft's actions.

The sustainability page only vaguely refers to Microsoft's own water consumption: "Organizations are also partially responsible for the management of freshwater resources" [22]. These ambiguous "organizations," only "partially" responsible for water issues, are referred to obliquely, with little detail. If one stopped reading there, they might be surprised to find that, from 2020 to 2023, Microsoft itself made headlines for its extreme consumption of freshwater. In those three years, the company's water withdrawals "increased more than 60%... reaching roughly 13 billion liters in 2023... mainly associated with the increasing demand for cooling in data centers" [23]. To put that in the "global population" context that Microsoft put forward, a single company is withdrawing more water annually than several countries combined [24]. Twenty percent of that consumption is in "medium-high, high, or extremely high water-stressed areas" [25], meaning that the water used for data centers is desperately needed for the local habitat from which it is sourced.

In December, 2024, Microsoft published an article in which they admitted that they were "not yet on track" in reducing their water use, and that "As water challenges grow more extreme, we know we have more work to do" [26]. The same article then detailed the company's "launch" of a "closed loop" cooling system that does not require a freshwater supply, and that can "deliver precise temperature control without water evaporation." At the time of writing of this paper, there were no available reports on the real-world outcomes of that new system, so it is difficult to determine conclusive PRE status for Microsoft's water consumption. The shifting of responsibility for water consumption from the company to others around the world using ambiguous terminology does show PRE tendencies.

Pollution – PREs: In 2020, Microsoft pledged to "achieve zero waste for Microsoft's direct operations, products and packaging by 2030" [27] and to be "carbon negative... launching today an aggressive program to cut our carbon emissions by more than half by 2030" [28]. They wrote that "If we don't curb emissions, and temperatures continue to climb, science tells us that the results will be catastrophic... We recognize that progress requires not just a bold goal but a detailed plan" [28].

The detailed plan is off to a bumpy start. Historically, Microsoft's data centers have emitted copious amounts of greenhouse gas pollution, and the first three years of its somber pledge have yielded only increases. "[Microsofts'] 2023 GHG emissions rose by 29.1% from 2020, reaching 15.4 million tons of CO₂ equivalent... it generates over 36,000 tons of waste ... and its end-of-life waste from sold products amounts to an estimated 45,000 tons annually" [25]. In their 2025 Environmental Sustainability Report, Microsoft shared these emissions statistics but did not directly address the fact that halfway through their carbon-negative pledge, their emissions are going up rather than down. Rather, the only clue to the less-than-stellar delivery on environmental promises is found in the loaded wording of a paragraph in the broad introduction to the document: "We remain pragmatically optimistic" [12]. One way to interpret that phrase is that the company is optimistic but not making any firm guarantees. Additionally, the whole premise is based on pragmatism, suggesting that if the goals are no longer practical, expectations should be duly tempered. Microsoft is five years into its ten-year pledge, and the pollution statistics are going the wrong way. In this area, I posit that Microsoft is engaged in environmental PREs.

2.2 OpenAI

OpenAI does not have a published ethics or environmental policy or any published stance on REEs. Please see Appendix C for further information on this front.

Energy consumption and pollution generation² – PREs: The lack of environmental policy does not preclude internal and external curiosity about the company’s environmental impact. At least two developers have asked about energy consumption and CO2 generation on OpenAI’s developer community forum: once in 2021 [29] and once in 2023 [30]. Both times, forum leaders and OpenAI staff members have responded with vague answers assuring inquirers that, while they “haven’t done that full calculation,” since OpenAI “runs on (Microsoft’s) Azure (infrastructure),” OpenAI runs on “100% renewable energy” as of 2025. Of course, we know that Microsoft’s 100% renewable energy pledge was certainly not met since their emissions went *up* between 2020 and 2025, so any company staking their own renewability claims on Microsoft’s cannot honestly assert 100% renewability energy.

Beyond company forums, there are reports that “On average, a ChatGPT query needs nearly 10 times as much electricity... as a Google search.” [31]. Although those reports have been disputed [32], OpenAI has mounted “a dashboard [which] indicates GPT-5’s average energy consumption [as] higher than all other models they benchmark except for OpenAI’s o3 reasoning model...” [33]. Researchers have monitored previous models and determined that GPT-5 requires “significantly more energy than GPT-4o [34]. “Given recent reports that ChatGPT handles 2.5bn requests a day... GPT-5 could reach the daily electricity demand of 1.5m US homes” [33]. Since OpenAI staff members claim that the company runs on 100% renewable energy, and that claim has been refuted by the relevant environmental reports, combined with the fact that the company’s newest model makes even more massive demands on energy grids, I conclude that OpenAI is engaged in PREs on this front.

Water – PREs: Again, OpenAI has not published an environmental policy or report. Its CEO, Sam Altman, has defended his company’s water consumption in the face of negative press coverage. In a blog entry, Altman claims that “the average query... uses about 0.000085 gallons of water; roughly one fifteenth of a teaspoon.” That is arguably Phase 1 of the water consumption PREs for Open AI. Even the most environmentally conscious among us couldn’t begrudge such a small amount of water per query. Phase 2, however, is not far behind. Journalists pointed out that if OpenAI’s 800 million weekly active users (in April 2025) “averaged one daily query, that would be... 68,000 gallons of water every day” [35]. Altman’s presentation of his company as using a fraction of a fraction of its actual water consumption, while undeniably well aware of the number of active users and their usage habits, is well within the realm of PREs.

ChatGPT’s REE extraction, energy consumption and pollution generation are all extremely problematic. But since the company has no environmental policy in which they address those issues, it is difficult to ascertain if they do or do not meet the definitions of PREs. Still, staff member responses on company forums and the CEO’s blithe reference to a comically undercalculated rate of water consumption do qualify as PREs.

2.3 Amazon

Amazon also publishes annual sustainability reports in which they “set bold, long-term aspirations... and create strategic, actionable plans to achieve them” [36]. “Improvements” and “advancements” are touted, interspersed with pictures of flowers, solar power grids, and children.

REEs: Like Microsoft, Amazon also touts investments in Cyclic Materials [37] In Amazon’s 2024 Sustainably Report, there is one mention of REEs (or any variation of that phrase). The company shared:

² The information relevant to these two categories is impossible to separate in the source material and will therefore be combined.

We aim to use more recycled materials when sourcing minerals for our electronic products. In 2024, we introduced the new Kindle Colorsoft Signature Edition e-reader with a battery made from 100% recycled cobalt and the Echo Hub Smart Home Control Panel with magnets made from 100% recycled rare earth elements. We also engage our suppliers and supply chain partners on responsible mineral sourcing mechanisms and collaborate to advance industry-wide progress. [36]

Here we find the classic feel-good assertions to placate concerned potential customers. If one were to stop reading there, the conclusion may well be that Amazon is addressing REE problems actively and responsibly. But further reading of Amazon's own electronic product offerings, some listed proudly with the massive amounts of consumer sales,³ indicate that the two devices that factor into the Sustainability Report are a negligible percentage of the company's output. Amazon's list of devices it manufactures includes 33 item categories: Echoes, Fire tablets, Kindles, TV Sticks, Ring camera and alarm systems, Blink camera systems, Eero wifi hardware, Zoox autonomous vehicles, and more. Among these dozens of products, comprising hundreds of pieces of hardware sold millions of times, only two are mentioned in the sustainability report regarding REEs, and despite some misleading claims only a small part of each of those two devices is comprised of recycled material. For example, while the "100% recycled" descriptor is used twice in the sustainability report, further inspection of separately listed product schematics indicates that, in total, recycled content in the aforementioned Kindle device as a whole tops out at 18%, including the battery [39]. Surely, some recycling is better than none. But the repeated touting of "100% recycled" REEs, combined with the comparatively low amounts of actually recycled materials used in the few Amazon devices mentioned in the report, qualifies as PREs.

Energy - PREs: Amazon has also shown interest in nuclear energy to fill in where electricity demands surpass supply. In 2024, the company partnered with the startup X-Energy and was careful to highlight the environmental benefits of the deal in addition to the business interest: "This collaboration ... is a significant step toward accelerating advanced nuclear technologies that can help us bring new sources of carbon-free energy to the grid cost-effectively and safely," said Kevin Miller, Amazon's Vice President of Global Data Centers" [40].

In contrast to those claims, a Business Insider investigation into Amazon's Environmental PREs as they relate to energy procurement is worth quoting at length:

As awareness about the escalating power needs of its data facilities has grown, the company has sought to deliver a reassuring message regarding its operations and ambitious plans for expansion... The company said last year that its data centers in northern Virginia now operate on 100% renewable power. But there is a more nuanced — and far less green — reality to Amazon's claim. In Virginia, only 7% of the grid's power currently comes from renewable energy, according to the state's Department of Environmental Quality... the company currently sources about 1.7 gigawatts of renewable energy from solar and wind projects connected to the grid using what's called power-purchase agreements. Amazon has plans to tap an additional 4.2 gigawatts this way. While this new green energy technically flows onto the grid and not directly to Amazon's facilities, the purchase agreements allow the company to lay claim to it. [41]

This strategic touting of environment-friendly energy consumption while relying on ambiguous verbiage to obscure true energy sources places Amazon squarely in the domain of energy PREs.

Water - PREs: Amazon's "Water Stewardship" page [42] features a large image of a marsh and the following statements: "At Amazon, we know that water is a precious resource. We're committed to doing our part ... to improve health, empower women, enable access to education, increase family income, and improve overall quality of life." The company's pledge to go "Water Positive" ("That means we'll return more water to communities and the environment than we use in our data center operations") in 2022 was disseminated, press-release fashion, in publications like Forbes [43].

But reality reflects a PRE mentality. The company wrote that they "strive to source water from more sustainable sources, such as recycled and/or harvested rainwater, to minimize demands on public water supplies" [42]. Alas, striving to do something is not the same as doing it. Environmental

³ "Customers have purchased over half a billion Alexa-enabled devices and interact with Alexa tens of millions of times every hour" [38]

advocates have pointed out that “The company’s water stewardship goal doesn’t include the water consumed by the power plants that supply its data centers” [44]. Researchers from the University of California, Riverside also weighed in and are quoted in the same article as reporting: “They say they’re using very little water, but there’s a big water evaporation happening just nearby, and that’s for powering their data center.”

Amazon is also building massive, AI-centric data centers, and draining local areas dry in order to construct the buildings even before the cooling systems are brought online. One such data center is located in Saint Joseph County, Indiana, an area described as a “small natural wetland” on which “wildlife depends... One permit application showed that [Amazon] requested permission to pump 2.2 million gallons an hour, for 730 days. State officials are now investigating if [this] dewatering is the reason some neighbors are reporting dry wells” [45]. Once the data centers are online, then even more water will be pumped from the environs. The convergence of these details justifies a PRE categorization for Amazon’s purported water “stewardship.”

Pollution - PREs: Amazon’s pollution generation has made headlines due to the carbon generation of its deliveries [46] and the plastic packaging it uses for its products [47], and its AI development has elevated those concerns. On their “sustainability” web page, Amazon states: “We engage suppliers who manufacture our devices or their components—particularly final assembly sites, semiconductors, printed circuit boards, displays, batteries, and accessories—and **encourage** (*emphasis mine*) them to ... reduce manufacturing emissions” [48]. The detail of the encouragement, or consequences for suppliers who don’t respond to such encouragement, are not shared. The company itself pledged to reduce its carbon emissions to zero and, like other CAIDs, has fallen far short of those goals: “In 2019, the company set a goal to reach net-zero carbon emissions across its global operations by 2040 but since then, its emissions have tripled” [49].

Like other CAIDs, Amazon’s pledge to reduce greenhouse gas emissions has been foiled by its AI development in recent years. Their 2024 Sustainability Report indicated that total carbon emissions for the company were 68.25 million metric tons.

That’s ... a 33% increase from 2019, when the company launched its Climate Pledge commitment to reach net-zero emissions across its operations by 2040... Amazon Employees for Climate Justice, an organization of workers at the tech giant pushing for more climate action... says that in areas of the U.S. that are home to more than 70% of Amazon data centers, electricity comes primarily from gas or coal. Utility companies are also building out new fossil fuel infrastructure to support these data centers. [50]

Amazon employees also identified issues with the company’s use of the “carbon credits” system described in Appendix B. “In some cases, Amazon Employees for Climate Justice says, “the company has simply purchased the ‘credit’ for existing renewables, which would have been used anyway” [50]. Without such credits, the company’s 2022 emissions totals would have been over 300% higher than the reported number [51]. Touting energy conservation while consuming more energy than ever, and basing emission report data on the misleading carbon credits system qualify Amazon as engaging in PREs in this category.

2.4 Google

Like Microsoft and Amazon, Google is admirable in that it publishes yearly sustainability reports.

REEs - PREs: In 2019, Google wrote on their sustainability page: “As a company committed to sourcing our minerals responsibly, Google is working on new ways to make the mineral-tracking process more transparent for everyone” [52]. Phase 1 is complete: Google assures the public that they are aware of the problematic nature of mineral sourcing and are working on ways to solve it. The only question that remains is, “How?” Unfortunately, that question leads only to Phase 2 of PREs. Problematic mineral sourcing has increasingly made headlines since 2019, but Google’s “commitment” did not extend to today, as indicated by the company’s 2025 Environmental Report. The word “mineral” does not appear in the report at all, nor does “mining” [53]. The one mention of REEs comes from the claim that “The magnets in Pixel Watch 3 and in the haptics engine of Pixel 9 and Pixel 9 Pro phone series are made with 100% recycled rare-earth elements” [53]. But

following the footnote down to page 117 of the 120-page document informs the reader that “Pixel Watch 3 docking, speaker, and haptic magnets contain 100% recycled rare earth elements, but the majority of the magnet weight consists of other materials.” Similar to Amazon, Google seems to have picked one or two products to tout using the “100% recycled” descriptor, but further scrutiny shows the less impressive (and less press release worthy) reality of minimal commitment to using REEs from renewable sources. As such, I conclude that Google engages in environmental PREs in the realm of REEs.

Energy Consumption and Pollution – PREs:⁴ Google has a history of committing to do right by the environment even when global regulations no longer force them to do so. Sands and Morison’s work on the subject is worth quoting at length:

... following U.S. President Donald Trump’s decision to pull out of the Paris Agreement ... Google signed onto the “We Are Still In” campaign along with Amazon, Apple, and Facebook ... committing to working with local and state lawmakers to reduce the U.S.’s carbon emissions. To demonstrate this commitment, Google has recently made the largest corporate purchase of renewable energy in history... and have worked to ensure their 15 data centers across the globe are powered sustainably... [6]

Here we have a clear Phase 1 of PREs. Google made multiple announcements about its continued dedication to environmental protections. Phase 2, however, is predictably and decidedly bleaker. Under the larger heading “Net Zero Goal” in the 2024 environmental report, there are six paragraphs in smaller print. That last paragraph, on page 32, contains the following admission:

In 2023, our total GHG emissions were 14.3 million tCO₂ e, representing a 13% year-over-year increase and a 48% increase compared to our 2019 target base year. This result was primarily due to increases in data center energy consumption and supply chain emissions. As we further integrate AI into our products, reducing emissions may be challenging due to increasing energy demands from the greater intensity of AI compute, and the emissions associated with the expected increases in our technical infrastructure investment. [54]

Despite all of the initial promises, the company now cautions that protecting the environment “may be challenging.” Once again, Google and other large CAIDs make bold promises and later temper them when market forces and their own ambitions diverge from the plan. As Sands and Morison put it, “While Google’s external policies on the environment and sustainability support climate action, it is clear that their internal policies do not consistently reflect that focus” [6].

Water – PREs: Google’s data centers are similar to other CAIDs in their water demands. The company appears eager to join the contingent of concerned citizens regarding water consumption. In their 2025 environmental report, the subsection on water begins,

Water is one of the most essential resources on Earth. And though water risk varies by location and isn’t present everywhere, growing concerns in many regions mean managing this precious resource is no longer just a responsibility, but a necessity. We’re working to do just that through a strategy centered on advancing responsible water use at Google, benefiting watersheds and communities, and supporting water security with technology.... In 2024, we consumed a total of approximately 8.1 billion gallons (31 billion liters or 31 million cubic meters) of water across our data centers (excluding those operated by third parties) and offices. [53]

That’s double their 2022 water consumption of 4.3 billion gallons of water [55], a massive leap that the company attributes to the rise of AI energy demands. The company is quick to point out that the “majority” of their freshwater consumption occurred in “regions where water resources are abundant: in 2024, 72% of our freshwater withdrawals came from sources at low risk of water depletion or scarcity” [53]. Taking Google’s statements at face value, that leaves over a quarter of Google’s multi-billion-gallon annual water consumption being sourced from high risk and high scarcity areas, plus the murky source data for whatever third-party consumption is tied to the company’s operations. According to an investigative report: “Google is the most likely [among

⁴ The information relevant to these two categories is impossible to separate in the source material and will therefore be combined.

CAIDs] to build in dry areas... It has seven active data centres in parts of the US facing water scarcity and is building six more” [56].

The next paragraph in the “water stewardship” section of the environmental report segues: “Enter Google’s climate-conscious cooling strategy, our multidimensional methodology for choosing cooling systems for our data center campuses” in which “...we look at balancing the availability of carbon-free energy and responsibly sourced water to minimize the net climate impact both today and in the future” and decide which cooling method will be used: “air cooling, water cooling, refrigerants or some combination of these solutions” [53]. This set of statements is noteworthy for several reasons: The use of the verb “enter” to introduce the concept implies novelty, but the linked page [57] indicates that this strategy was first introduced in 2022. That’s the year in which their water consumption was less than half of what it is now, so this *multidimensional methodology* doesn’t seem to be moving the water consumption needle in the right direction. Furthermore, there is no indication that the new strategy is implemented three years after its origin. The company’s oft-repeated “commitment,” for the moment, appears to be comprised of looking (“we look at”) and developing (“we are currently developing new cooling solutions ...[57]) while the actual water consumption rates double. Given the reported water consumption rates, the other cooling methods, “air cooling, ... refrigerants or some combination of these solutions,” don’t seem to be very popular when “looked at.” Lorena Jaume-Palasi, of the Ethical Tech Society, highlighted the deliberate choice of water cooling: “I’ll believe it when I see it... Most data centres right now are going from air cooling to water cooling because liquid is more efficient [for] high-density racks, which are the ones that are mostly being used for AI” [58].

Due to the dubious timeline and ever-climbing rates of freshwater consumption, plus the company’s failure to report the 25% of their water consumption that comes from water-scarce and drought-plagued areas and the fact that they are building more data centers in those areas, I posit that in relation to water consumption, Google engages in PREs.

2.5 Meta

Meta’s general Sustainability page [59] features images of lush forests and lakes. The written content is inspirational: “We believe sustainability is about more than operating responsibly. It is an opportunity to support the communities we are a part of and have a positive impact on the world.” “Biodiversity” subsection of the Sustainability Report goes into slightly more detail about the company’s practices: “We are taking steps to avoid harmful practices, reduce negative impacts on nature, lead on nature restoration at scale and accelerate the nature positive movement” [60].

REEs - PREs: That’s good: the company acknowledges its harmful practices and is taking steps to avoid and reduce them. Now all we need is the detail: what exactly is the company doing to “reduce negative impacts on nature,” especially regarding REEs? Finding that answer is a little more onerous for the reader. Under goals and commitments, the reader comes across this bullet point with hyperlinked content:

We updated our [Responsible Minerals Sourcing Policy](#) to continue to address evolving expectations for the [responsible sourcing of minerals](#) and reinforce our alignment with the Organisation for Economic Co-operation and Development (OECD) Due Diligence Guidance and related laws.

The first link does not direct the reader to a responsible minerals sourcing policy, but rather an “investor relations” page featuring investor events and press releases. While this may just be a case of a randomly misdirected link, it is arguably telling that a link touting the Responsible Minerals Sourcing Policy connects to a page that has no mention of such a policy and only leads to details on shareholder meetings and press releases. The second link, on responsible minerals sourcing, does not mention REEs or any variant of that phrase. It brings readers to a portion of the report that focuses on the human (rather than environmental) toll of unethical extraction practices of “conflict minerals.” While conflict minerals are certainly worthy of company and customer attention, it’s notable that a page on “responsible sourcing of minerals” has no mention of the environment – especially when the company had previously acknowledged its negative impact on local habitats.

Broken links and incomplete web pages are not rare. Can we really classify these issues as PREs? Taken in isolation, the threshold for PREs has arguably not been met. I still classify Meta as engaging in PREs, though, because of the following: The report's small acknowledgements of the necessity for better sustainability practices are accompanied by multiple paragraphs' worth of caveats and conditions:

[N]o guarantees or promises are made that [sustainability goals] will be met or successfully executed, and actual results may differ, possibly materially... data, statistics and metrics included in this report are non-audited estimates, not necessarily prepared in accordance with generally accepted accounting principles, ... and may be subject to revision. This report has not been externally assured or verified by an independent third party unless otherwise noted... Especially with respect to the matters discussed in this report, many factors and uncertainties relating to our operations and business environment, all of which are difficult to predict and many of which are outside of our control, influence whether any forward-looking statements can or will be achieved. Any one of those factors... could cause our actual results, including the achievement of targets, goals or commitments, to differ materially from those expressed or implied in writing in any forward-looking statements made by Meta or on its behalf.

Essentially, all of the inspiring, progressive words and data in Meta's environmental report can be construed as aspirational and should not be interpreted as reality. Certainly, Meta's sustainability policy regarding REEs qualifies as environmental PREs.

Energy Consumption - PREs: Meta's data centers use more power than large U.S. cities do [61]. "Zuckerberg touted Meta's investments in massive, multi-gigawatt data centers with grandiose names ("Prometheus" and "Hyperion") and mind-boggling scale: One of the data centers... will have a footprint nearly as big as Manhattan" [3]. A CEO that brags about massive energy footprints while his company puts out reassuring environmental reports presents a paradox worthy of PREs.

Water - PREs: In their 2024 report, Meta stated their "18 operational water restoration projects returned 1.5 billion gallons of water to high and medium water stress regions" [60]. That may be true (previously mentioned caveats notwithstanding), but the lived experience of people who live near Meta's newly constructed AI data centers diverge from that narrative. The construction of Meta's new AI data centers has directly resulted in local inhabitants' wells running dry [62]. Residents next to the company's new data center in Georgia reported a lack of potable water [63].

Pollution - PREs: Like other CAIDs, Meta relies heavily on the dubious "carbon credit" system to make its claims about protecting the environment from its pollution, like "Renewable energy procurement has helped us reduce our overall emissions by a total of 16.4 M tons of CO₂e since 2021" [60]. But once again, Phase 2 of the PRE nature of these claims becomes apparent when more information and context is provided.

Depending on how you look at it, the company's greenhouse gas emissions either grew or fell last year... The discrepancy has to do with whether you're assessing total or net emissions and, crucially, whether you're considering the local impact Meta has in places where it operates... Meta, unsurprisingly, highlights the smaller figure near the top of its report. [64]

Meta's bold claims about renewable energy paired with its lack of measurable effort or progress on that front constitute pollution PREs. In all categories, there are significant disparities between Meta's published environmental preservation measures and what is happening in real life.

3 Conclusion

To varying degrees, all of the CAIDs in this study engage in PREs. When comparing CAID reports with other sources that document environmental impact of AI development, it is apparent that in areas including REEs, freshwater consumption, energy consumption, and pollution generation, the AI companies report commitments to sustainability and conservation that are not borne out in the reality of their business practices. The discrepancies between what the companies say they do and what they actually do are indicative of Press Release Ethics. In this case, CAIDs tell consumers and regulators that they are working to preserve our shared environment, when in reality they are deriving massive profits from actively and irreversibly harming it.

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