Dear Leader Schumer,

We are pleased that you have made passing legislation regulating the use of artificial intelligence (AI) a priority for the United States Senate. While AI could bring benefits, barring congressional action, AI may also inflict immeasurable harm on communities across the country. We have already seen how automated decision-making tools are causing horrific civil rights abuses;[1] how "bossware" workplace surveillance systems are disaffecting workers and increasing rates of workplace injuries;[2] how the massive computing resources required to compete in this sector is strengthening Big Tech's monopoly power over our economy;[3] and how generative AI is already accelerating the spread of mis- and disinformation.[4]

As you engage your colleagues around legislative solutions to prevent these harms, we urge you to similarly consider how to ensure the AI boom does not undermine efforts to fight climate change.

Ever-rising temperatures are causing devastating climate events with increasing frequency, from deadly floods,[5] to unprecedented heatwaves,[6] to violent wildfires.[7] The human and economic toll of climate change is striking. As climate change continues on its current trajectory, we face increasing risks of famine, drought, and species extinction. Simply put, climate change threatens our way of life.

The creation and use of large language models (LLMs) heightens the risks associated with climate change on two fronts. First, due to their enormous energy requirements and the carbon footprint associated with their growth and proliferation, the widespread use of LLMs will increase carbon emissions. Second, the ease and speed with which people and organizations can use LLMs to produce

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[1] The New York TImes, "Eight Months Pregnant and Arrested After False Facial Recognition Match," Aug. 6, 2023, Link.
[2] Center for Democracy and Technology, ""Workplace Surveillance Comments to OSTP," June 29, 2023, Link.
[3] Politico, "AI might have already set the stage for the next tech monopoly," March 22, 2023, Link.
[4] Axios, "How AI will turbocharge misinformation — and what we can do about it," July 10, 2023, Link.
[5] The Guardian, "A year on, the devastating long-term effects of Pakistan's floods are revealed," Aug. 5, 2023, Link.
[6] The New York Times, "Iran Orders Nationwide Shutdown Because of 'Unprecedented' Heat," Aug. 1, 2023, Link.
[7] NBC News, "Maui wildfires now deadliest in modern U.S. history," Aug. 13, 2023, Link.

and distribute climate disinformation threatens to perpetuate climate denialism and slow efforts to fight climate change.[8]

The energy use of LLMs must be monitored and disclosed transparently, allowing both consumers and policymakers to understand the trade-off of such technology. Internet companies already require a staggering amount of energy, and increased AI implementation will only balloon that usage further. Take, for example, Google, which because of its self-reporting is the company we can know most about. In 2020, Google consumed twice as much energy as the entire city of San Francisco (15.5 terawatts).[9] Adding generative AI to its search engines could increase this number fivefold.[10] Another research project estimated that Google's AI energy cost in 2021 was more than all the homes in Atlanta.[11] Indicators such as water usage, which can serve as a rough proxy for electricity demand since data centers use water to stay cool, suggest electricity usage is set to skyrocket as AI becomes more ubiquitous—Google's on-site water use rose roughly 20 percent in 2022.[12]

Additional analysis found that training ChatGPT3 used more energy than 120 American homes in an average year.[13] There is even data to suggest that the carbon emitted by data centers, which is likely to increase as the use of AI becomes more widespread, has exceeded that of the commercial airline industry.[14] These uneven but extreme results show that more transparency is needed, especially because most companies do not report to the degree that Google does.

Additionally, but no less important, is the manner in which generative AI threatens to amplify the types of climate disinformation that have plagued the social media era and slowed efforts to fight climate change. Researchers have been able to easily bypass ChatGPT's safeguards to produce an article from the perspective of a climate change denier that argued global temperatures are actually

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8 Stanford University & Georgetown University, "Can AI Write Persuasive Propaganda?", Feb. 21, 2023, Link.
9 CNBC, "How Google plans to use 100% carbon-free energy in its data centers by 2030," April 13, 2022, Link.
10 CNBC, "How Google plans to use 100% carbon-free energy in its data centers by 2030," April 13, 2022, Link.
11 Bloomberg, "Artificial Intelligence Is Booming—So Is Its Carbon Footprint," March 9, 2023, Link.
12 The Atlantic, "The Internet's Next Great Power Suck," Aug. 23, 2023, Link.
13 Cornell University's arXiv, "Carbon Emissions and Large Neural Network Training," Accessed Aug. 14, 2023, Link.
14 Bloomberg, "How Companies Are Seeking to Reduce the 'Invisible Emissions' of Digitization," Feb. 4, 2023, Link.

decreasing.[15] Elsewhere, studies have documented extensive examples of the harms caused by climate disinformation on social media in the U.S. that we believe could be further worsened by the onset of AI, including: an overall rise in the amount of climate disinformation presented to users;[16] algorithmically enhanced lies that falsely blamed oil and gas infrastructure failures on wind power;[17] the monetization of climate disinformation by both companies (i.e. profit generated via their ad tech products and services) and by repeat offender accounts (through revenue-sharing schemes and other platform features);[18] false claims linking wind power and whale deaths;[19] and the disproportionate reach and impact of climate denial narratives during global climate negotiations.[20] LLMs are likely to make this problem worse, not only because social media content is used to train such models, but also due to the ease with which people and organizations can use LLMs to produce vast volumes of climate disinformation that is specifically tailored to mislead unique audiences.

We appreciated your description of climate change as an "existential crisis" that "disproportionately harms poorer and working class communities and communities of color, making it not only an environmental crisis, but also an economic and justice crisis."[21] We agree when you say that it is "long past time for the Senate to take a leading role in combating the existential threat of our time," referring to climate change and committing to a "whole-of-Senate approach" to fighting climate change.[22]

At a minimum, that approach must include prioritizing the following provisions to advance climate policy in the AI legislation you are developing.

- Requiring companies to publicly report on energy use and emissions produced by the full life cycle of AI models, including training, updating and search queries.

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[15] Inside Clilmate News, "AI Can Spread Climate Misinformation 'Much Cheaper and Faster,' Study Warns," March 31, 2023, Link.
[16] The Times, "Climate-sceptic accounts surge after Elon Musk's Twitter takeover," April 17, 2023, Link.
[17] Friends of the Earth, "New Facebook study: 99 percent of climate disinformation goes unchecked," Sept. 21, 2021, Link.
[18] The New York Times, "Google Promised to Defund Climate Lies, but the Ads Keep Coming," May 2, 2023, Link.
[19] Media Matters for America, "Misinformation about recent whale deaths dominated discussions of offshore wind energy on Facebook," March 23, 2023, Link.
[20] Institute for Strategic Dialogue, "Deny, Deceive, Delay Vol. 2: Exposing New Trends in Climate Mis- and Disinformation at COP27," Jan. 19, 2023, Link.
[21] ChuckSchumer.com, "Issue: Climate Change," Accessed Aug. 14, 2023, Link.
[22] Roll Call, "Schumer previews 'whole-of-Senate' climate fight," Feb. 3, 2023, Link.

- Google's researchers also called for this in a 2021 peer-reviewed paper saying "To help reduce the carbon footprint of ML [machine learning], we believe energy usage and CO_2e should be a key metric in evaluating models, and we are collaborating with MLPerf developers to include energy usage during training and inference in this industry standard benchmark."[23]

- Studying the effect AI systems have on climate disinformation as part of a required impact assessment.

- Implementing rigorous safeguards against the mass production of disinformation.

- Ensuring that companies and their executives can be held liable for harms that occur as a result of generative AI, including harms to the environment, while preserving free expression and human rights.

- Requiring companies to provide an explanation to regulators and the general public of how generative AI models produce information, how their accuracy is measured, and the sources of evidence for factual claims they make.

- Requiring companies to report on the use of key resources that are critical to the clean-energy transition (e.g., aluminum, chromium, cobalt, copper, graphite, lithium, nickel, platinum group metals, zinc, and rare earth minerals) through the full life cycle of AI models; and require a study of the effects of LLMs on the price and availability of these resources for the clean energy transition that includes projections over relevant timelines and recommendations for policies to ensure that the use of LLMs does not hinder the transition.

We look forward to engaging with your office throughout the legislative process as you develop legislation regulating AI.

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[23] Cornell University's arXiv, "Carbon Emissions and Large Neural Network Training," Accessed Aug. 14, 2023, Link.

Sincerely,

Accountable Tech
Action for the Climate Emergency
Amazon Employees for Climate Justice
Center for Countering Digital Hate
Check My Ads
Climate Action Against Disinformation
Eko
Electronic Privacy Information Center
Fair Vote UK
Fight for the Future
Friends of the Earth
Global Action Plan
Global Project Against Hate and Extremism
Green America
GreenLatinos
Greenlight America
Greenpeace USA
Kairos Action
National Fair Housing Alliance
Open MIC
Public Citizen
The Tech Oversight Project
The Value Alliance
Union of Concerned Scientists