

WHAT DOES POWER KNOW AND CARE ABOUT THE CLIMATE?



Picture: AI generated

Who is the most powerful person in the world? Power here defined as the ability to influence policy, markets, and the state of the world in a way that shapes everyone's present and future. If we accept the notion that "money is power", it follows that the richest person in the world is the most powerful. Alternatively, if we consider someone whose decisions directly impact global politics, the economy, and the environment, then the leader of the most influential country might hold that title. Currently, the richest man on Earth is Elon Musk, and the head of the most powerful country (including militarily) is President Joe Biden, who will soon be replaced either by his Vice President Kamala Harris or former President Donald Trump, depending on the outcome of the upcoming U.S. elections.

On August 12, 2024, Musk and Trump, who arguably are among the most powerful men in the world, held a public [conversation](#) on Musk's social media platform "X". During the hour-and-a-half

event, which covered a range of topics, a little over eight minutes were dedicated to discussing climate change. This brief opinion piece is not an attempt to fact-check their entire conversation ([others have already done so](#)) or to discuss the character or legacy of both individuals; it is simply an invitation to reflect on some of their arguments and consider the implications. To that end, I offer my commentary.

Trump: *"...the biggest threat is not global warming, where the ocean's going to rise 1/8 of an inch over the next 400 years, the big, and you'll have more oceanfront property, right? The biggest threat is not that. The biggest threat is nuclear warming"*

Trump seems to suggest that the effects of global warming are limited to sea-level rise, thereby overlooking other known and potentially catastrophic consequences, such as stronger and more frequent droughts, floods, wildfires, and heatwaves; reduced freshwater resources; increased vector-borne diseases;

lower crop yields; decreased worker productivity; negative impacts on human health; changes in the thermohaline circulation; the death of coral reefs; and widespread species extinctions. Not to mention the potential cascading consequences and systemic risks from these impacts and their combined effects, many of which we are only beginning to understand. Furthermore, he significantly underestimates the rate of sea-level rise, which is [several times higher](#) annually than he suggests. He also seems to view it as a real estate business opportunity, missing the point that it would reduce -not increase- oceanfront property and, far more importantly, it (depending on the level of warming) will [affect numerous regions](#) across the planet, [reduce food production](#), and may [displace millions of people](#). Lastly, Trump seems to argue that nuclear war is a greater threat than climate change. While there is no reason to neglect one threat in favor of the other, it is worth noting that the global-scale danger of a nuclear war is ["nuclear winter"](#) -not - "nuclear warming"-, which refers to the adverse impact that nuclear explosions would have on the global climate.

"The greatest threat to humanity may be the combination of the concentration of CO₂ in the atmosphere and the concentration of power in a few."

Musk: *"...we do over time want to*

move to a sustainable energy economy because eventually you do run out of, I mean, you run out of oil and gas, it's not infinite"

Musk points out that fossil fuels are limited, non-renewable resources, but seems to overlook the fact that our "[carbon budget](#)" (the amount of CO₂ that we can still emit before reaching a level of warming that would significantly exacerbate the problems mentioned above) is much closer to being depleted (or it may have [already been depleted](#)) than fossil fuels reserves. This is the primary reason for the urgency of an energy transition.

Musk: *"...if you just keep increasing the parts-per-million [ppm of CO₂] in the atmosphere long enough eventually it actually simply gets uncomfortable to breathe [...] if you go past a 1000 ppm of CO₂ you start getting headaches and nausea"*

Musk argues that a dangerous level of atmospheric CO₂ concentration is 1000 ppm because it causes human discomfort. This limit, which corresponds to [safe indoor CO₂](#) levels, largely overlooks the fact that at the current atmospheric concentration of about 423 ppm of CO₂ ([2024 forecast](#)), and the associated level of warming, major disturbances in ecosystems around the globe are already occurring. For instance, massive [coral bleaching](#) events are killing corals, threatening marine life, and endangering fisheries that millions of people rely on for food and income. Hence, the destruction of ecosystems will cause humans far more than mere discomfort, and if [research on ancient climates serves](#) as a reference, when atmospheric CO₂ levels were around 1000 ppm (about 50 million years ago), global temperatures were about 13°C higher than today, with sea levels around 70 meters higher, and the planet's conditions were vastly different from anything humans

have experienced.

Musk: *"...we are now in the sort of 400 range, we're adding I think about roughly 2 ppm per year. So, I mean, still gives us, what it means, like, we still have quite a bit of time. But so there's not like, we don't need to rush and we don't need to like, you know, stop farmers from farming or, you know, prevent people from having steaks or right basic stuff like that. Like, leave the farmers alone"*

This appears to be Musk's reasoning for believing there is no urgent need to reduce CO₂ emissions. Annual atmospheric CO₂ growth rates are estimated to be between [2 and 3 ppm](#). Assuming this rate remains constant, if the dangerous limit were 1000 ppm, we would have a window of about 192 to 289 years. However, as previously mentioned, the current and rising CO₂ concentration is already causing significant problems, including [harming farmers](#), who will [continue to be affected](#) by greater warming much more than by potential dietary changes in the population.

Trump: *"I got ANWR in Alaska approved. [...] That's ANWR. That's bigger or they think it could be bigger than Saudi Arabia, in Alaska, could be bigger than Saudi Arabia. [...] And I'll get it going very quickly, because not only is it big for Alaska, I mean, you talk about economic development that for the United States. I mean, that is they say bigger than Saudi Arabia or the same size and pure, really good stuff. [...] So, I think we have, you know, perhaps hundreds of years left. Nobody really knows. But during that time, something will come around that will be very good."*

Trump is referring to the oil reserves found in the [Arctic National Wildlife Refuge](#) (ANWR), estimated at 10.4 billion barrels of oil ([mean estimate](#)), which are much lower than [Saudi Arabia's](#)

[reserves](#), but nonetheless significant and of apparent good quality (the "really good stuff"). Setting aside the irreversible environmental impacts that exploiting such resources would have [on wildlife](#) and the unique Arctic ecosystem, there seems to be no concern about the amount of CO₂ emissions resulting from extracting and using such oil reserves (not including the additional carbon emissions that could be released in the form of CH₄ due to thawing permafrost influenced by [disruptions to caribou migration](#)). Thus, there is no mention, and seemingly no concern, about what these emissions would mean for the global climate.

Musk: *"...my view is, like, if you just look at sort of the ppm that increments every year, you know, you get sort of 2 or 3 ppm every year of CO₂. I mean, I think some of that is problematic if it accelerates, if you start going from 2 or 3 to, say, 5. And then there may be some situations where you get a step change increase in the CO₂. And I think we don't want to get too close to a 1000 ppm because, like, that actually makes it uncomfortable to breathe, like just existing in a 1000 ppm of CO₂ is on top of that, like, that's considered like an industrial hazard."*

Musk emphasizes that the dangerous level of CO₂ in the atmosphere is 1000 ppm and that the current annual increase only becomes a problem if it accelerates to 5 ppm. Presumably, this is because we would then reach 1000 ppm faster (in about 85 years at a constant growth rate of 5 ppm per year), rather than due to any other effect from doubling our current annual emissions.

Musk: *"...if, I don't know, 50 to 100 years from now we're, I don't know, mostly sustainable, I think that it'll probably be OK. So, it's*

not like the house is on fire immediately, but I think it is something we need to move towards, and on, you know, on balance it's probably better to move there faster than slower, but without vilifying the oil and gas industry, and without causing hardship in the short term. I think this can be done without, you know, people can still have, you know, a stake and they can still drive gasoline cars and, you know, it's OK."

Consistent with his belief that we have several decades before atmospheric CO₂ concentrations become problematic, Musk suggest that there is no urgent need for a sustainability transition. Consequently, he implies that there is no need for people to consider lifestyle changes (including driving gasoline-powered cars; a somewhat ironic stance given that one of his companies produces electric vehicles). This view contrast sharply with research indicating that humanity has already surpassed several thresholds ([planetary boundaries](#)) that put the stability of the entire Earth's system at risk.

Trump: *"...the one thing that I don't understand is that people talk about global warming or they talk about climate change, but they never talk about nuclear warming. [...] that's very dangerous."*

Lastly, Trump seems to insist that "nuclear warming" is the threat that people should be concerned about.

While this conversation has been criticized and even labeled "[the dumbest climate conversation of all time](#)", aside from the scientific inaccuracies and clear blind spots, it reveals a general lack of urgency to act, combined with a misleading human-centered view of environmental problems, and perhaps even a dangerous focus on perceived business opportunities over climate risks. This might

explain why, on one hand, Musk's Tesla claims to be promoting a rapid sustainability transition, while on the other hand, Musk's SpaceX competes with other billionaires' companies to develop space tourism despite the [climate and stratospheric ozone impacts](#) posed by this emerging (and yet-to-be regulated for environmental effects) industry.

Climate change is often described as a matter of risk (a shared and existential risk). Perhaps power hinders risk perception. In any case, it is the vision (and blindness) of the most powerful people that may determine how we allocate most of our scarce time and resources (including whatever carbon budget we have left). Hence, it remains uncertain whether we will invest our rapidly diminishing time and resources in pursuing "solutions" such as Jeff Bezos' (the second richest man in the world) idea to start [moving polluting industries to space](#), or in rapidly decarbonizing them here on Earth.

In an era when the question "Do you believe in climate change?" has become normalized, despite climate science not belonging to the realm of the supernatural (and hence not being a matter of faith), what is hard to believe is the extent to which power seems oblivious to the seriousness of the climate change problem. Thus, the greatest threat to humanity may be the combined concentration of CO₂ in the atmosphere and the concentration of power in a few. And so, as we consider ways to significantly reduce humanity's carbon emissions, we should also consider how to significantly reduce humanity's hotspots of power.

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