We are much too reliant on oil and fossil fuels. U.S consumption of oil increased 12% from 2020 and is at an all-time high.

U.S Energy Information Administration N/A date, Independent Statistics and Analysis, "Oil and Petroleum Products Explained", 4/10/2025 [Use of oil - U.S. Energy Information Administration (EIA)] Caro

In 2022, U.S. total petroleum consumption averaged about 20.28 million barrels per day (b/d), which included about 1.17 million b/d of biofuels (1.002 b/d of fuel ethanol and 0.164 b/d of biodiesel, renewable diesel, and other biofuels combined).[1] U.S. total petroleum consumption was about 2% higher in 2022 than in 2021 and about 12% higher than in 2020, largely because the U.S. economy was returning to pre-COVID-19 pandemic activity levels. Consumption of nearly all petroleum products in 2022 was higher than in 2021.

This reliance has shown its detriment to ecosystems and public health.

Ramirez 21, Rachel Ramirez, climate and environmental writer for CNN, October 21, 2021, CNN, "Why ending our dependence on fossil fuels is so challenging" [https://www.cnn.com/2021/10/04/us/oil-spill-fossil-fuel-dependence-climate/index.html] accessed 4/10 RA

Humans have been burning fossil fuels for energy since the Industrial Revolution. We use them to heat our homes, cook our food and fuel our cars. Over the course of more than a century, fossil fuels became entrenched in every aspect of the economy and people's lives. Our reliance on oil, coal and natural gas created the climate crisis, and it threatens ecosystems and human health through acute environmental disasters, like this weekend's oil spill off the coast of California. Fossil fuel accounts for more than 80% of global energy consumption, and scientists have warned that production would need to be reduced substantially to avoid a potentially catastrophic rise in global temperatures. A study published in September found that a vast majority of Earth's remaining fossil fuels must remain underground by 2050 to avoid the worst consequences of climate change, including worsening extreme weather, irreversible ecosystem shifts, loss of life as well as economic hardship. According to a key UN report in August, the only way to limit warming to 1.5 degrees Celsius above pre-industrial levels – what scientists say is imperative to avoid the worst impacts – is to make deep cuts to fossil fuel emissions while simultaneously removing greenhouse gases from the atmosphere.

Right now, The US is investing an egregious amount of money in green technology

US Department of Energy - "Clean Energy Infrastructure Funding for Projects and Programs" [https://www.energy.gov/infrastructure/clean-energy-infrastructure-funding-projects-and-programs] Accessed 4/10/25 ROOMIES

The U.S. Department of Energy (DOE), through the Office of the Under Secretary for Infrastructure, is focused on working across the public and private sectors to help the U.S. transition to the clean energy economy. With more than $97 billion in investments through the Bipartisan Infrastructure Law and the Inflation Reduction Act, DOE is embarking on a new era focused on the rapid commercialization, demonstration, and deployment of clean energy technologies. DOE is playing a critical role in efforts to rapidly lower energy costs, slash carbon emissions, and create new industries with the high-quality union jobs that are guaranteed to boost domestic manufacturing capabilities while strengthening U.S. global competitiveness. Through the implementation of these historic federal investments in clean energy infrastructure, DOE is turbocharging U.S. climate action, moving the nation toward industrial decarbonization and driving down costs for the rapid deployment of cheap, clean, energy technologies available right now, and made right here, in America.

In comparison, the US is not funding nuclear energy as much.

Statista, “Total Research and Development (R&D) budget allocated for nuclear energy by the Department of Energy of the United States (U.S.) from 2021 to 2023 and congressional request for 2024”, Statista, June 28, 2024, Accessed 4/10/25 ROOMIES

https://www.statista.com/statistics/1334858/research-and-development-budget-for-nuclear-energy-in-the-united-states/

The total Research and Development (R&D) budget for nuclear energy allocated by the Department of Energy (DOE) of the United States was around 1.77 billion U.S. dollars in financial year 2023. The U.S. DOE's R&D budget request for nuclear energy for financial year 2024 amounted to 1.56 billion U.S. dollars.

This is a mistake because green tech is counterintuitive and terrible for the environment.

Nayar 21, Jaya Nayar, Government and Philosphy writer for the Harvard International Review, August 12, 2021, “Not So “Green” Technology: The Complicated Legacy of Rare Earth Mining”, Harvard International Review [https://hir.harvard.edu/not-so-green-technology-the-complicated-legacy-of-rare-earth-mining/#:~:text=There%20are%20two%20primary%20methods,air%2C%20water%2C%20and%20soil.] accessed 4/10 roomies

Most people view technology as the future, a force of good that will generally improve quality of life around the world. In the business sector, Silicon Valley and tech startups exhibit massive growth potential; in manufacturing, new machinery and automation are boosting efficiency; and in the environmental realm, green technology presents the best prospects for decarbonization.But as much as technology is hailed as the panacea of the future, most of these innovations have a dirty underside: production of these new technologies requires companies to dig up what are referred to as rare earth elements (REEs).REEs describe the 15 lanthanides on the periodic table (La-Lu), plus Scandium (Sc) and Yttrium (Y). Contrary to what the name suggests, REEs are abundant in the earth’s crust. The catch is that they come in low concentrations in minerals, and even when found, they are hard to separate from other elements, which is what makes them “rare.” Perhaps these elements also get their name from being rarely discussed, even though everything from the iPhone to the Tesla electric engine to LED lights use REEs. Demand for these elements is projected to spike in coming years as governments, organizations, and individuals increasingly invest in clean energy. An electric car requires six times the mineral inputs of a conventional car, and a wind plant requires nine times more minerals than a gas-fired plant. With current estimates, demand for REEs could increase six-fold by 2040. Lithium and cobalt demand could increase ten to twenty times by 2050 because of electric cars. Demand for dysprosium and neodymium is estimated to increase seven to twenty-six times over the next 25 years as a result of electric vehicles and wind turbines. But REEs also have grim prospects: the way companies extract REEs largely damages communities and contaminates surrounding areas. Mining Externalities There are two primary methods for REE mining, both of which release toxic chemicals into the environment. The first involves removing topsoil and creating

a leaching pond where chemicals are added to the extracted earth to separate metals. This form of chemical erosion is common since the chemicals dissolve the rare earth, allowing it to be concentrated and then refined. However, leaching ponds, full of toxic chemicals, may leak into groundwater when not properly secured and can sometimes affect entire waterways. The second method involves drilling holes into the ground using polyvinyl chloride (PVC) pipes and rubber hoses to pump chemicals into the earth, which also creates a leaching pond with similar problems. Additionally, PVC pipes are sometimes left in areas that are never cleaned up. Both methods produce mountains of toxic waste, with high risk of environmental and health hazards. For every ton of rare earth produced, the mining process yields 13kg of dust, 9,600-12,000 cubic meters of waste gas, 75 cubic meters of wastewater, and one ton of radioactive residue. This stems from the fact that rare earth element ores have metals that, when mixed with leaching pond chemicals, contaminate air, water, and soil. Most worrying is that rare earth ores are often laced with radioactive thorium and uranium, which result in especially detrimental health effects. Overall, for every ton of rare earth, 2,000 tons of toxic waste are produced.

1. **Wind and solar power are inefficient**

Burrows 18 - Leah Burrows, Science and Technology Communications Director for Harvard, October 30, 2018, "Large-scale wind power would require more land and cause more environmental impact than previously thought" [https://seas.harvard.edu/news/2018/10/large-scale-wind-power-would-require-more-land-and-cause-more-environmental-impact] Accessed 4/10/25 roomies <3

In two papers — published today in Environmental Research Letters and Joule — Harvard University researchers find that the transition to wind or solar power in the United States would require five to 20 times more land area than previously thought, and if such large-scale wind farms were built, would warm average surface temperatures over the continental United States by 0.24 degrees Celsius.

For wind, we found that the average power density — meaning the rate of energy generation divided by the encompassing area of the wind plant — was up to 100-times lower than estimates by some leading energy experts," said Miller, who is the first author of both papers. "Most of these estimates failed to consider the turbine-atmosphere interaction. "For an isolated wind turbine, interactions are not important at all, but once the wind farms are more than five to 10 kilometers deep, these interactions have a major impact on the power density."

The observation-based wind power densities are also much lower than important estimates from the US Department of Energy (DOE) and the Intergovernmental Panel on Climate Change (IPCC).

For solar energy, the average power density (measured in watts per meter squared) is 10 times higher than wind power, but also much lower than estimates by leading energy experts. This research suggests that not only will wind farms require more land area to hit the proposed renewable energy targets but also, at such large scale, would become an active player in the climate system. The next question, as explored in the journal Joule, was how would such large-scale wind farms impact the climate system. To estimate the impacts of wind power, Keith and Miller established a baseline for the 2012-2014 U.S. climate using a standard weather forecasting model. Then, they covered one third of the continental U.S. with enough wind turbines to meet

present-day U.S. electricity demand. The researchers found this scenario would warm the surface temperature of the continental U.S. by 0.24 degrees Celsius, with the largest changes occurring at night when surface temperatures increased by up to 1.5ºC.

But by investing more into nuclear energy, we fix all of these problems.

US Department of Energy 22, July 2022, "Nuclear Power is the Most Reliable Energy Source and It's Not Even Close", US Department of Energy Office of Nuclear Energy [https://www.energy.gov/ne/articles/nuclear-power-most-reliable-energy-source-and-its-not-even-close] accessed 4/10 ROOMIES

As you can see, nuclear energy has by far the highest capacity factor of any other energy source. This basically means nuclear power plants are producing maximum power more than 92% of the time during the year. That's about nearly 2 times more as natural gas and coal units, and almost 3 times or more reliable than wind and solar plants.

Nuclear power plants are typically used more often because they require less maintenance and are designed to operate for longer stretches before refueling (typically every 1.5 or 2 years). Natural gas and coal capacity factors are generally lower due to routine maintenance and/or refueling at these facilities. Renewable plants are considered intermittent or variable sources and are mostly limited by a lack of fuel (i.e. wind, sun, or water). As a result, these plants need a backup power source such as large-scale storage (not currently available at grid-scale)—or they can be paired with a reliable baseload power like nuclear energy.

1) Nuclear energy sustainable

Advanced Nuclear Technology 23, 2023 EPRI - "Is Nuclear Energy Good or Bad for the Environment?" [https://ant.epri.com/article/nuclear-good-bad-environment#:~:text=Nuclear%20plants%20operate%20with%20zero%20emissions%2C%20and,of%20particulate%20matter%2C%20aerosols%2C%20and%20toxic%20chemicals.] Accessed 4/10/25 roomies

Nuclear energy protects air quality Nuclear plants operate with zero emissions, and the only gas that rises from a nuclear plant's cooling towers is steam. In addition to releasing no major greenhouse gasses during operation, nuclear plants don't release any air pollution in the form of particulate matter, aerosols, and toxic chemicals. In the U.S., the Nuclear Energy Institute estimates that the country's nuclear plants saved 471 MT_{CO2} in 2020 — equal to the emissions of about 100 million cars — and that closing the Vermont Yankee Nuclear Power Station led to a 650,000 T_{CO2} increase in just the first two months. This demonstrates the positive environmental and human health impacts of decarbonization and the social and environmental costs of an energy landscape with less clean power than today. Nuclear energy has a small land footprint. A single nuclear reactor, built with today's designs, generates about 1 GW of electricity with a plant area slightly larger than a square mile. It produces this energy at least 90% of the time.

In order to generate the same amount of electricity as a nuclear plant, wind power requires a land area up to 360 times larger, and a solar plant would require up to 75 times more land to reach the same electric output. Considering the enormous amounts of land that would be required to scale wind and solar energy, nuclear is an attractive clean energy source due to its small, highly efficient land footprint. Nuclear energy produces minimal waste Environmental groups often express concerns about nuclear waste. Used nuclear fuel contains a handful of isotopes that will remain radioactive for hundreds of thousands of years, such as plutonium. However, used nuclear fuel is relatively small in volume, making it more manageable to deal with. If all the used fuel from 60 years of nuclear power generation in the U.S. were put together, it would fit on a football field and rise less than 10 yards high. There are three solutions that will make nuclear waste management even easier in the years to come: repositories, reprocessing, and recycling.

No immediate action leads to a billion deaths.

The Economic Times 23, August 29, 2023, "Human-caused climate change may lead to 1 billion premature deaths over next century: Study" [https://economictimes.indiatimes.com/news/science/human-caused-climate-change-may-lead-to-1-billion-premature-deaths-over-next-century-study/articleshow/103163698.cms?from=md] accessed 4/10 roomies

Climate change induced by human activity is likely to be responsible for the premature death of about one billion people over the next century, if global warming reaches two degrees Celsius, a study suggests. The oil and gas industry is directly and indirectly responsible for over 40 per cent of carbon emissions -- impacting the lives of billions of people, many living in the world's most remote and low-resourced communities, the researchers said.