

**Written Testimony of Dr. Rachel Cleetus,
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“Leading the Charge: Opportunities to Strengthen America’s Energy Reliability”

**House Committee on Oversight and Reform, Subcommittee on Economic Growth, Energy
Policy and Regulatory Affairs**

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Good morning. Thank you, Chairman Burlison, Ranking Member Frost and members of the subcommittee for holding this hearing. It’s an honor to be here. My name is Rachel Cleetus, and I am the policy director for the climate and energy program at the Union of Concerned Scientists.

The United States is in the midst of an evolution of our energy system toward one that is cleaner, more efficient, and more reliable. This is already yielding benefits and has the potential to deliver significantly more if we accelerate that momentum in ways that bring widespread economic and public health benefits. Policies, innovation, and market drivers can help secure a clean, affordable and more resilient energy system. But there are some challenges and headwinds that need to be addressed.

Consumers are worried about rising energy costs. Our aging power grid is increasingly vulnerable to failure in the face of extreme weather and climate-related disasters. Pollution from a fossil fuel-dependent energy system is harming people’s health and the environment. Businesses that want to lead in the rapidly growing global clean energy economy now face significant market uncertainties due to federal policy rollbacks and funding freezes.

The solutions that can help address these challenges are clear: accelerating the transition to clean energy, ramping up renewable energy and energy efficiency, and investing in a modernized electric grid will help cut power bills, boost business opportunities, and improve public health. Doubling down on fossil fuels will instead take us in exactly the wrong direction, and only serves to promote the profits of fossil fuel companies and vested interests at the expense of the American public.

Renewable energy sources are now the dominant source of new power generation capacity in the United States because in many parts of the country they are the lowest-cost source of new electricity generation. Last year, renewables and battery storage accounted for 94% of all new large-scale capacity, with solar and battery storage leading the charge, with similar projections for

2025.^{1,2} In 2025, renewables are on track to supply 25% of electricity generation and nuclear 19%.³ The share of natural gas is expected to be about 40% and coal 16%.

In 2024, a record 49 GW of new solar power capacity and 11.9 GW of battery storage was added to the grid.⁴ The EIA projects a 45% increase in the amount of solar generating capacity between 2024 and 2026.⁵ The planned capacity additions in renewable power will support most of the increase in generation over the next two years.

The Inflation Reduction Act (IRA) and the Infrastructure Investment and Jobs Act (IIJA) provide critical funding for clean energy investments that are benefitting communities across the nation by expanding access to affordable energy, building domestic manufacturing and supply chains together with good paying jobs, and helping to limit pollution from fossil fuels.

In the past year, U.S. investments in clean energy, clean vehicles, building electrification and carbon management technology reached \$272 billion.⁶ Another estimate shows a record-breaking \$338 billion unlocked in financing for clean energy technologies, including for renewables, electric vehicles and power grids.⁷ These investments are crucial to keeping US businesses competitive in a world where cleaner and greener products are increasingly in demand.

As just one example, over 90% of the IIJA's \$5 billion dollar investment over five years in the Clean School Bus Program has gone toward electric zero emission school buses.⁸ Electric school buses are the best choice for reducing emissions that pollute our air and harm our health. On average, an electric school bus is at least 50 percent cleaner than even the cleanest combustion alternatives.

The current administration's actions to claw back or freeze these incredibly beneficial investments and undermine clean energy deployment will hurt businesses and consumers, slash good-paying jobs, stall opportunities to expand domestic manufacturing and exports, cede leadership on technological innovation, and ultimately harm electric reliability and increase energy costs.

Trying to turn back the clock and boost fossil fuels makes no sense. Market factors continue to drive ongoing coal plant retirements as coal-fired power is increasingly uneconomic. Meanwhile, an overreliance on natural gas and volatility in natural gas prices increase the risk of higher prices for industry—and thus the economy—and further pose a two-fold challenge to consumers' pocketbooks, with impacts on prices for both electricity and for winter heating. A rush to further

¹ EIA 2024. Solar and battery storage to make up 81% of new U.S. electric-generating capacity in 2024. <https://www.eia.gov/todayinenergy/detail.php?id=64126>

² EIA 2025. Solar, battery storage to lead new U.S. generating capacity additions in 2025. https://www.eia.gov/todayinenergy/detail.php?id=64586&utm_medium=email

³ EIA 2025. Short-term Energy Outlook. https://www.eia.gov/outlooks/steo/pdf/steo_full.pdf

⁴ Bloomberg NEF. 2025. Sustainable Energy in America: 2025 Factbook. <https://bcse.org/wp-content/uploads/2025/02/2025-Sustainable-Energy-in-America-Factbook.pdf>

⁵ EIA. 2025. New solar plants expected to support most U.S. electric generation growth. <https://www.eia.gov/todayinenergy/detail.php?id=64364>

⁶ Rhodium Group and MIT. 2025. Clean Energy Investment Monitor: Q4 2024 Update. <https://www.cleaninvestmentmonitor.org/reports/clean-investment-monitor-q4-2024-update>

⁷ BNEF 2025.

⁸ Anair, Don. 2024. Electric School Buses: The Best Choice for Our Kids and Communities. <https://blog.ucsusa.org/don-anair/electric-school-buses-the-best-choice-for-our-kids-and-communities/>

expand LNG exports is only going to exacerbate the risks of higher prices for U.S. consumers. And in a carbon-constrained world, these kinds of projects are at great risk of becoming stranded assets.

EIA forecasts show that the U.S. benchmark Henry Hub natural gas spot price is projected to increase in 2025 to an average of \$3.80 per million British thermal units (MMBtu) and in 2026 to an average of \$4.20/MMBtu, primarily driven by increases in LNG exports.⁹

Furthermore, recent extreme weather events underscore that gas power plants face significant reliability concerns. Gas plants are vulnerable to a range of extreme weather events, including heat waves, cold snaps, and droughts, with the most catastrophic failures occurring in winter. Federal officials reviewed five winter storms between 2011-2022 that posed a threat to grid reliability. In each case, gas plant failures at a scale far beyond expected levels were the primary contributor to reliability challenges.¹⁰ Hybrid systems that couple renewable energy with storage provide significant grid reliability services, often more effectively than gas generators.

Worsening heat waves and drought are also putting pressure on the electric grid, increasing the need for air conditioning and negatively affecting hydropower resources—especially during summer months. In some parts of the country, climate-fueled disasters such as wildfires have also caused major power outages and increased electricity prices as utilities seek to recover costs from those events. Power infrastructure has also contributed to sparking catastrophic wildfire, raising the urgency for utility companies to invest in measures to reduce those risks.

Another factor that the power sector needs to plan and prepare for is that, after a long period of relatively flat electricity demand, the power sector is now facing increased demand both in the near-term from data centers and manufacturing^{11, 12} and in the long term from increased electrification of energy uses. Managing and planning for this demand growth to align with expansion of clean energy will be crucial to avoid electricity price increases, reliability concerns, and increases in pollution.

As a nation, we have significantly underinvested in the transmission grid—both in terms of upgrading the existing grid and expanding it to meet changing needs and resources. The aging grid is inadequate and increasingly at risk of failure, especially in the face of extreme weather and climate events.¹³ Power outages from extreme weather affect millions of people and cause billions of dollars of damages every year.¹⁴ Studies from DOE and NERC show that investments in

⁹ EIA. 2025. Short-term Energy Outlook, February 2025. <https://www.eia.gov/outlooks/steo/>

¹⁰ Arbaje, Paul, and Specht, Mark. 2024. Gas Malfunction: Calling into Question the Reliability of Gas Power Plants. Cambridge, MA: Union of Concerned Scientists. <https://www.ucsusa.org/resources/gas-malfunction> <https://doi.org/10.47923/2024.15312>

¹¹ John D. Wilson, Zach Zimmerman, and Rob Gramlich. 2024. Strategic Industries Surging: Driving U.S. Power Demand. <https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf>

¹² Arman Shehabi et al. 2024. 2024 United States Data Center Energy Usage Report. <https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf>

¹³ American Society of Civil Engineers. 2021. Report Card for America's Infrastructure: Energy. <https://infrastructurereportcard.org/cat-item/energy-infrastructure/>

¹⁴ Climate Central. 2024. Weather-Related Power Outages Rising. <https://www.climatecentral.org/climate-matters/weather-related-power-outages-rising>

transmission can help maintain reliability and build resilience while reducing costs.^{15,16} DOE also found that transmission investments will lower costs in areas of the country that “endure consistently high prices.”

By significantly expanding investments in the transmission system, we can build a 21st century grid to reliably and sustainably power our 21st century economy.¹⁷ This can help integrate higher levels of renewable energy, provide reliability benefits, and help reduce electricity bills and pollution. This includes investments in high-capacity regional and interregional transmission, as well as investments to make the grid more resilient to extreme weather events. Implementing well-considered permitting reforms can help accelerate transmission builds by improving coordination across agencies, state and local jurisdictions, ensuring early community engagement and encouraging long-term planning, while maintaining strong social and environmental safeguards including through robust implementation of the National Environmental Policy Act (NEPA).¹⁸

There are successful examples we can learn from. The Midcontinent Independent System Operator (MISO) has recently approved nearly \$22 billion in new transmission system investments as part of its Long-Range Transmission Planning.¹⁹ These investments build on an earlier tranche from 2022 that is now in the process of permitting. They are designed to enable the clean energy ambitions of its Midwestern states and utilities while maintaining reliability and delivering significant net benefits to the region’s consumers.²⁰

Modernizing the power sector also provides opportunities to clean up air, water and soil pollution from fossil fuel use. For example, the EPA’s air pollution standards for the power sector can help achieve significant reductions in health-harming pollutants, with overall benefits that far outweigh costs. A recent study on the EPA’s power plant carbon standards shows that “*the rules may be met with relatively small costs, even before accounting for climate, public health, and other societal benefits.*”²¹ We must ensure that all communities can reap the benefits of a cleaner, more modern energy system through targeted investments and programs for low-income communities and communities overburdened by pollution.

Burning fossil fuels is also the primary driver of human-caused climate change which is already exerting a deadly and costly toll on communities and businesses across the nation. Addressing this

¹⁵ DOE. 2023. National Transmission Needs Study. <https://www.energy.gov/gdo/national-transmission-needs-study>

¹⁶ NERC. 2024. Interregional Transfer Capability Study (ITCS) Strengthening Reliability Through the Energy Transformation. https://www.nerc.com/pa/RAPA/Documents/ITCS_Final_Report.pdf

¹⁷ Gomberg, Sam. 2024. Massive Investments in the Midwest Grid Are Worth Celebrating. <https://blog.ucsusa.org/sam-gomberg/massive-investments-in-the-midwest-grid-are-worth-celebrating/>

¹⁸ Yang, Vivian. 2024. For Clean Energy Progress in California, We Must Solve the Permitting Problem. <https://blog.ucsusa.org/vivian-yang/for-clean-energy-progress-in-california-we-must-solve-the-permitting-problem-part-3-of-3/>

¹⁹ Gignac, James. 2021. Why Should We Care About MISO’s Long Range Transmission Planning? <https://blog.ucsusa.org/james-gignac/why-should-we-care-about-misos-long-range-transmission-planning/>

²⁰ Gomberg, Sam. 2022. Midwest Transmission System Investments Will Be a Game Changer for a Clean Energy Future. <https://blog.ucsusa.org/sam-gomberg/midwest-transmission-system-investments-will-be-a-game-changer-for-a-clean-energy-future/>

²¹ John Bistline *et al.*, Impacts of EPA’s finalized power plant greenhouse gas standards. *Science* 387,140-143(2025).DOI:[10.1126/science.adt5665](https://doi.org/10.1126/science.adt5665)

challenge by transitioning to cleaner forms of energy and reaching net zero emissions by mid-century can bring substantial benefits for the U.S. even in the near term. UCS research shows that following this path could achieve net savings in U.S. consumer energy costs of more than \$100 billion as soon as 2030.²² There would also be significant reductions in nitrogen oxides (NOx), sulfur dioxide (SO₂), and fine particulate matter (PM_{2.5}). The reductions in PM_{2.5} alone are a huge public health boon, cutting mortality by up to 73,000 deaths and resulting in up to \$830 billion in public health benefits by 2050. In addition, the avoided climate damages from reduced carbon emissions, calculated using the social cost of carbon, exceed \$400 billion by 2035 and reach nearly \$1.3 trillion by 2050.

In sum, modernizing and cleaning up the power sector is vital for our economy, to drive innovation, and for the United States' continued competitiveness on the global stage. It will also help protect public health by curtailing harmful pollution, including global warming emissions. Undermining clean energy deployment is deeply harmful and goes against the interests of the public and the nation as a whole. Expanding access to affordable clean energy and energy efficiency, together with ramping up transmission investments, is the best way to protect consumers' pocketbooks and enhance the reliability of the power system.

²² Clemmer, Steve, Rachel Cleetus, Jeremy Martin, Maria Cecilia Pinto de Moura, Paul Arbaje, Maria Chavez, and Sandra Settler. 2023. *Accelerating Clean Energy Ambition: How the United States Can Meet Its Climate Goals While Delivering Public Health and Economic Benefits*. Cambridge, MA: Union of Concerned Scientists.
<https://doi.org/10.47923/2023.15253>