Written Testimony of Dr. Rachel Cleetus, Policy Director, Climate and Energy Program
Union of Concerned Scientists

"Building America's Clean Future: Pathways to Decarbonize the Economy"

The Subcommittee on Environment and Climate Change of the Committee on Energy and Commerce

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Good morning and thank you, Chairman Tonko, Ranking Member Shimkus, and Members of the Subcommittee, for providing me the opportunity to testify here today. My name is Rachel Cleetus. I am the policy director and lead economist for the climate and energy program at the Union of Concerned Scientists.

Decarbonizing our economy is vital to help limit the risks of climate impacts, such as worsening heat waves of the kind that much of nation suffered through last week. Embracing a clean energy future would also be a boon for the economy and for public health. If we do this right, we can help ensure that *all* communities—especially fenceline communities that have borne a disproportionate burden of the health impacts of our dependence on fossil fuels—directly benefit from the transition to clean energy. We must also ensure a just transition for coal-dependent workers and communities.

This must ultimately be about a just and equitable socioeconomic transition, not simply technological changes. Decarbonizing the economy will not be easy and it will require a sustained effort over decades. But it is both a necessary and achievable goal for the US.

I'd like to start with a few **insights from the latest climate science**

The IPCC 1.5°C special report,[1] released last October, synthesized the latest science on the impacts of global warming of 1.5°C and 2°C and highlighted that impacts including heat waves, droughts, floods, wildfires, and ecosystem damages will worsen considerably, and often non-linearly, as temperatures rise.

The report also laid out GHG emissions pathways that would help limit temperature increase (see figure 1). To limit temperature increase to 1.5°C will require global net CO_2 emissions to be reduced by about 45% from 2010 levels by 2030, reaching net zero by 2050.[2] Deep cuts in non-CO_2 heat-trapping emissions, such as methane and nitrous oxide, will also be necessary. The

[1] Intergovernmental Panel on Climate Change (IPCC). 2018. Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emissions pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty

[2] In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO_2 emissions decline by about 45% from 2010 levels by 2030, reaching net zero around 2050.

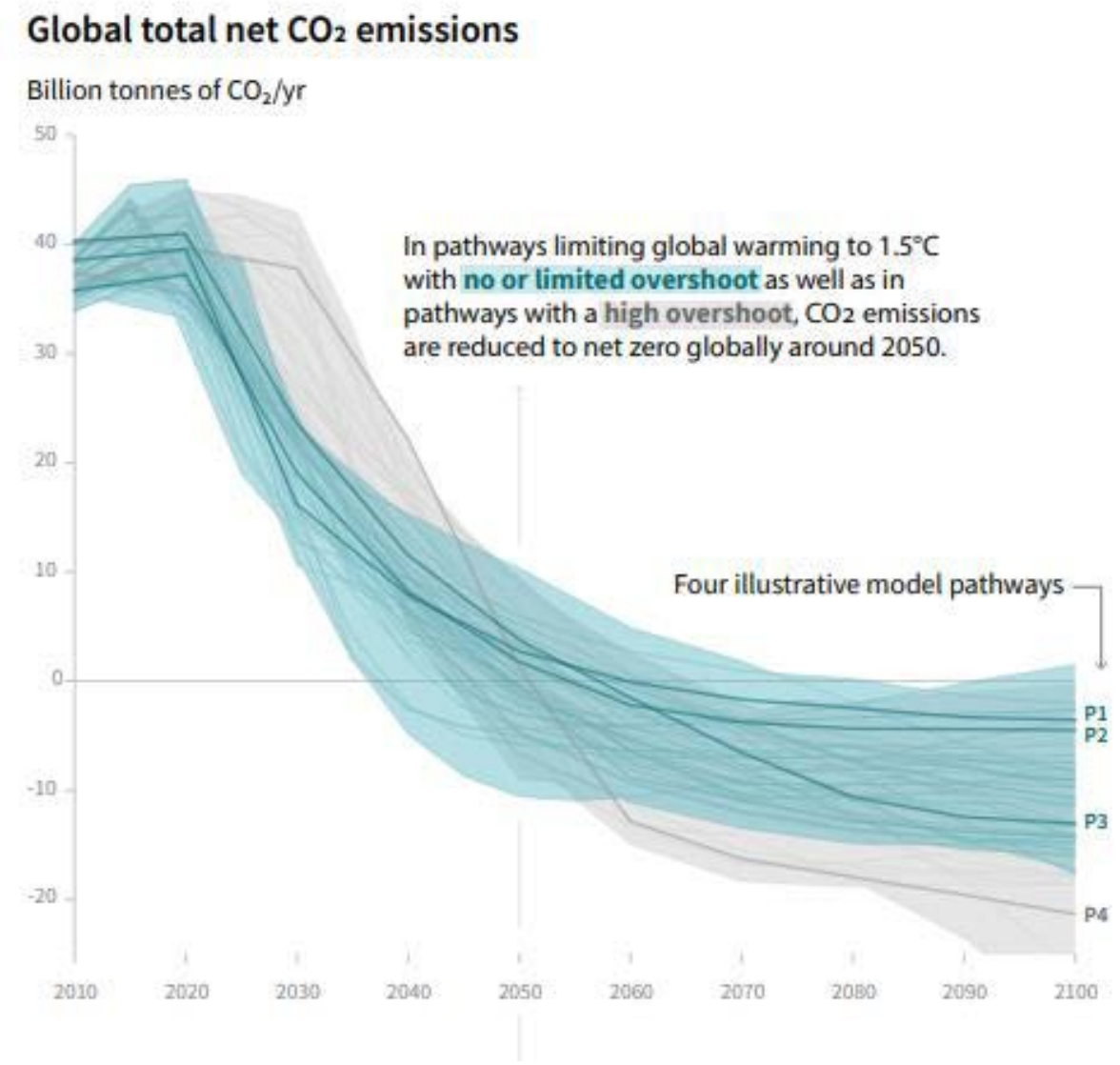
report points out that we will also need to deploy **so-called "negative emissions" options.**[3] These carbon dioxide removal technologies and practices include afforestation and reforestation; enhanced land management practices; direct air capture; and bioenergy with carbon capture and storage (BECCS).

The US Fourth National Climate Assessment —a quadrennial report mandated by Congress since 1990—was released last November.[4] Drafted by thirteen federal agencies and drawing on the best available science, the report emphasized that climate change is not about some distant future; communities around our nation are already coping with record-breaking heat, flooding, wildfires and accelerating sea level rise. The report's stark conclusion is that these climate-related impacts will only get worse and their costs will mount dramatically if carbon emissions continue unabated. Annual losses in some sectors are projected to exceed $100 billion by the end of the century and surpass the gross domestic product of many states.

[3] All pathways that limit global warming to 1.5°C with limited or no overshoot project the use of CDR on the order of 100–1000 GtCO2 over the 21st century.

[4] US Global Change Research Program (USGCRP). 2018. Fourth national climate assessment: Impacts, risks, and adaptation in the United States, volume 2. Washington, DC. Online at https:// nca2018.globalchange.gov.
See also: US Global Change Research Program (USGCRP). 2017. Fourth national climate assessment: Climate Science Special Report, volume 1. Washington, DC. Online at https://science2017.globalchange.gov/

Figure 1: IPCC modeled pathways for limiting temperature increase to 1.5C



So **where are we today relative to where we need to be?**

The science is clear: **we need to get to net zero global carbon emissions by 2050**.

The world's remaining carbon budget to stay below a 1.5ºC or 2ºC temperature increase is rapidly being depleted, and we're far off track of where we need to be as the 2018 UNEP Emissions Gap report points out.[5]

The US can and must play a leading role in charting the path to net zero emissions by 2050. In light of this, it's sobering to see EIA data showing that US energy-related carbon dioxide emissions were ***up*** 2.8% in 2018, the largest yearly increase since 2010. The *Annual Energy*

[5] https://www.unenvironment.org/resources/emissions-gap-report-2018

Outlook 2019 reference case projects they'll be roughly at current levels in 2050, which is a far cry from the deep reductions needed.[6]

The good news is that the costs of renewable energy are falling steeply. According to a recent report by Bloomberg New Energy Finance (BNEF), globally, the costs for onshore wind, solar photovoltaics and offshore wind have fallen by 49 percent, 84 percent and 56 percent respectively since 2010.[7] The costs of lithium ion batteries has decreased 76 percent since 2012. The DOE 2017 Wind Technologies Market report shows a reduction in the national average cost of wind purchasing power agreements (PPAs) in the U.S.—which represents the all-in costs of building and operating wind projects including both the capital cost reduction and increase in capacity factors—of 73% between 2009 and 2017.[8] Similarly, Lazard's annual levelized cost of energy analysis for the U.S. shows a continued decline in the costs of generating renewable electricity, especially utility-scale wind and solar, such that its costs are below or on par with conventional generation resources.[9]

The US is on track for 20 percent renewable electricity (hydro plus non-hydro renewables) by 2020, with about two-thirds of that coming from non-hydro renewables. In 2018, wind energy contributed 6.5% of the nation's electricity supply, more than 10% of total electricity generation in fourteen states, between 20% and 30% of the electricity in three states (North Dakota, South Dakota and Maine), and more than 30% in four states—Iowa, Kansas, Oklahoma, and South Dakota.[10,11] Texas leads the nation in installed wind power and jobs in the wind industry.[12] The latest data show that the US has just sped past the two million mark in solar photovoltaic systems.[13] Offshore wind is poised to take off, with new targets being set by multiple states, including Connecticut, Massachusetts, Maine, Maryland, New Jersey and New York and Virginia.[14] Several leading states, including California, Colorado, Hawaii, New Mexico, New York, and Washington have set ambitious targets for clean energy. States, cities, businesses and other sub-national entities are leading the way in eagerly embracing renewable energy because it makes smart economic sense and is good for the climate.[15]

We have at the ready many of the scalable technology solutions we need **to get on a path to net zero emissions by 2050**, including ramping up energy efficiency and renewable energy; electrifying many energy end-uses in the transportation, industrial and buildings sectors; and

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[6] https://www.eia.gov/outlooks/aeo/

[7] As measured by the levelized cost of electricity (LCOE) per megawatt-hour across 46 countries. Data from Bloomberg New Energy Finance. See https://about.bnef.com/blog/battery-powers-latest-plunge-costs-threatens-coal-gas/

[8] U.S. Department of Energy (DOE). 2018. Wind Technologies Market Report. Online at https://emp.lbl.gov/publications/2017-wind-technologies-market-report

[9] https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2018/

[10] U.S. Department of Energy (DOE). 2018.Wind Technologies Market Report. Online at https://emp.lbl.gov/publications/2017-wind-technologies-market-report

[11] https://nawindpower.com/awea-u-s-wind-grew-8-last-year-with-texas-leading-the-way

[12] https://nawindpower.com/awea-u-s-wind-grew-8-last-year-with-texas-leading-the-way

[13] https://www.woodmac.com/news/feature/the-united-states-surpasses-2-million-solar-installations/

[14] https://blog.ucsusa.org/john-rogers/raising-the-bar-on-offshore-wind-massachusetts-connecticut-new-jersey-new-york-maine-maryland-virginia

[15] More than 100 US cities have adopted 100% RE targets. See https://www.sierraclub.org/ready-for-100/commitments. 189 companies have made 100% RE commitments http://there100.org/companies

increasing carbon storage in lands and soils through better forest management, agricultural practices and soil management.

In the power sector, we need a diverse mix of low-carbon technologies. **Most analyses, including UCS', show renewable electricity playing a dominant role in decarbonizing the power sector**. This finding is robust across many studies including the 2016 US mid-century strategy for deep carbonization, the IPCC 1.5° C report, and the 2019 *350ppm Pathways for the US* study.[16] As renewables are ramped up, we have many tools available to ensure reliable and affordable integration of this generation, including investing in a modernized, more flexible electricity grid; investing in battery storage and new transmission capacity; having more geographical dispersion of renewable generation to take best advantage of plentiful resources nationwide; using the latest technologies to better schedule and forecast renewable generation; and implementing demand response and smart grid technologies.

The important thing to remember is that right now we are far from the high levels of renewables needed to reach net zero emissions. Renewables like wind and solar are the most cost-effective, near-term zero-carbon options, alongside energy efficiency. Many states are already demonstrating that policies to scale up renewables and energy efficiency are no-brainers. Our analysis shows that natural gas with CCS and nuclear will also likely need to be part of the mix, although their associated safety and social and environmental concerns must be addressed.

A 2016 UCS analysis shows that making deep cuts in power sector emissions, with high levels of electrification, is both feasible and affordable (especially when compared to the costs of runaway climate change).[17] We analyzed ways to cut US power sector carbon dioxide emissions by 90 percent or more by 2050, with four potential pathways characterized by a range of different technology cost and performance assumptions to capture uncertainties and to avoid being prescriptive. As a proxy for a robust policy, we used an escalating carbon price to drive emissions reductions.

We found that (see figure2):

- **All scenarios showed a dramatic increase in renewable electricity resources,** with renewables reaching up to 80 percent of the generation mix by 2050 and on the order of 50 percent or more by 2030.
- **Conventional fossil-fired generation must be tightly curtailed**. By 2030, conventional coal-fired power is nearly phased-out. While conventional natural gas is still about a third of the generation mix in 2030 in most of our cases, it declines to 7 percent or lower by 2050.

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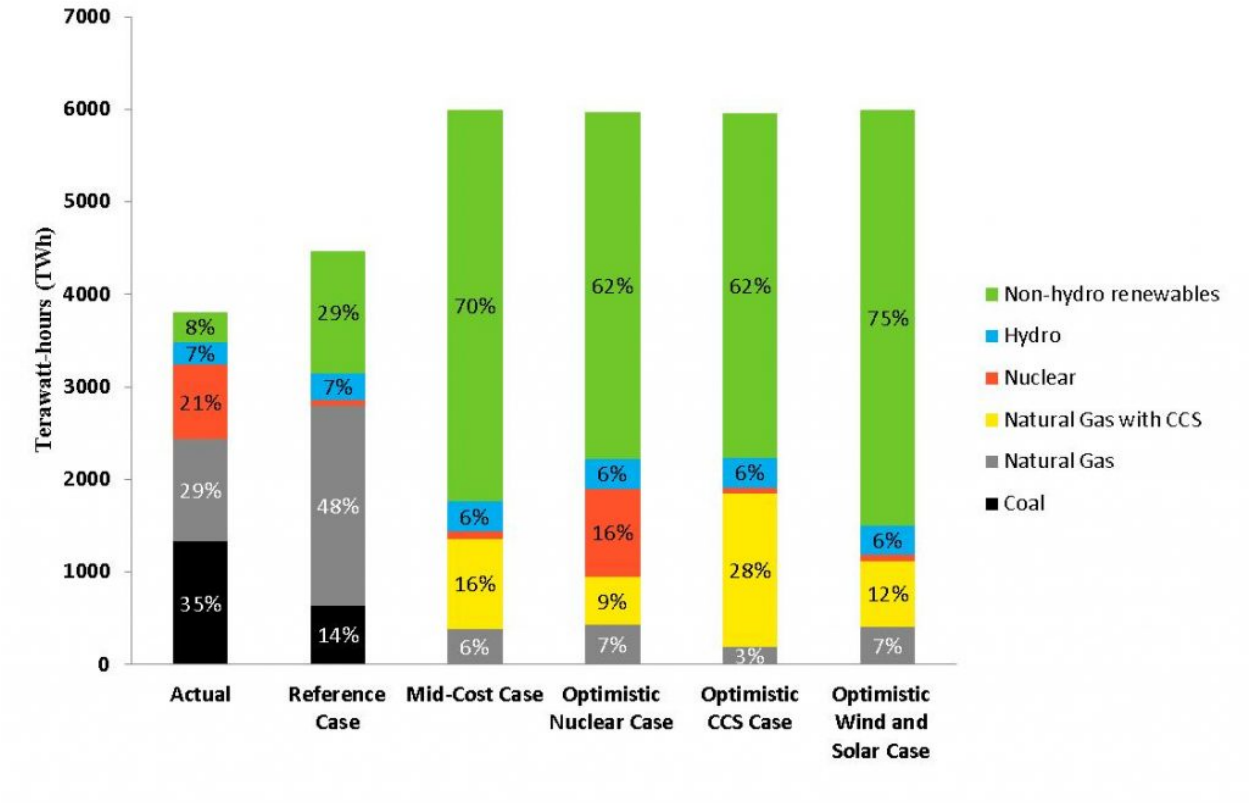
[16] See https://unfccc.int/files/focus/long-term_strategies/application/pdf/mid_century_strategy_report-final_red.pdf; https://www.ourchildrenstrust.org/350-ppm-pathways; and https://www.nrel.gov/docs/fy13osti/52409-ES.pdf; https://www.nrel.gov/docs/fy19osti/71913.pdf

[17] The US Power Sector in a Net Zero World. Online at https://www.ucsusa.org/sites/default/files/attach/2016/11/UCS-Deep-Decarbonization-working-paper.pdf

- **Natural gas with carbon capture and storage (CCS) will likely be needed.** This accounts for 9 to 16 percent of generation in three of our cases. In a fourth case, with optimistic assumptions for the costs of CCS, natural gas with CCS reached to 28 percent of generation by 2050.
- **Nuclear power's role is constrained by its costs**. In three out of four of our cases, nuclear generation stays relatively flat through 2030, and then declines quickly as existing nuclear plants are assumed to be retired when they reach 60 years. Only in one case, with optimistic assumptions about nuclear cost reductions and lifetime extensions, do we see a bigger role for nuclear power.
- **Significant investments are needed for a low carbon transition**. To shift generation to low and zero carbon resources and increase electrification of energy end uses, our analysis showed that power sector investments on the order of at least $250 billion per year are needed to bring on line the necessary clean energy resources and grid infrastructure. Additional investments would also be needed to build out infrastructure for electrification of other sectors, which our analysis was not able to account for.
- **The public health benefits of a low carbon electricity sector are huge.** The shift from fossil fuels to low-carbon electricity helps reduce CO_2 and co-pollutants such as nitrogen oxides (NOx), sulfur dioxide (SO_2), particulate matter and toxic pollutants like mercury. We quantified the monetary benefits of reductions in NOx, SO_2 and CO_2; all the low carbon pathways have cumulative benefits exceeding $270 billion through 2030, relative to the reference case, just from power sector emission reductions let alone emission reductions from electrification of other sectors.

Figure 2: US electricity generation mix in 2050 under four deep decarbonization scenarios



A key near-term challenge we must confront is how to **avoid an overreliance on natural gas.** Natural gas is still a fossil fuel and a coal-to-gas switch is not enough to limit emissions in line with our climate goals. While natural gas has helped accelerate a transition away from coal and can play an important role in helping integrate high levels of renewables, **to get to net zero, the role of conventional natural gas must be contained within the next decade**.[18] In 2015 for the first time CO_2 emissions economywide from natural gas surpassed CO_2 emissions from coal, and the AEO2019 Reference case projects that natural gas CO_2 emissions will continue increasing as natural gas use increases.[19] Further, the extraction, production, storage and distribution of natural gas leads to methane leakage, and methane is a much more potent heat-trapping gas than CO_2 over a 20-year horizon. Without strong safeguards in place, heat-trapping emissions from natural gas pose a grave threat to our climate goals. The rapid buildout of conventional natural gas infrastructure in the US currently is a deeply worrisome trend and raises the specter of billions of dollars in stranded assets if we are to meet our climate goals.

[18] See https://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/natural-gas-gamble-risky-bet-on-clean-energy-future and https://www.ucsusa.org/clean-energy/ca-and-western-states/turning-down-gas and https://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_energy/climate-risks-natural-gas.pdf

[19] See https://www.eia.gov/todayinenergy/detail.php?id=38773

UCS analysis shows that to keep heat-trapping emissions down, we must limit conventional natural gas in the near term and begin a shift toward primarily natural gas with CCS by 2050. Innovative new technologies like Net Power's Allam Cycle design could also play a role.

A 2018 UCS analysis, *The Nuclear Power Dilemma: Declining Profits, Plant Closures, and the Threat of Rising Carbon Emissions*, highlights another near-term challenge.[20] We found that more than one-third of existing nuclear plants, representing 22 percent of total US nuclear capacity, are uneconomic or slated to close over the next decade. Without new policies, our analysis shows that if these and other marginally economic nuclear plants are closed before their operating licenses expire, the electricity would be replaced primarily with natural gas. If this occurs, cumulative carbon emissions from the US power sector could rise by as much as 6 percent at a time when we need to achieve deep cuts in emissions to limit the worst impacts of climate change. A national carbon price and/or low-carbon electricity standard (LCES) combined with strong safety standards would help preserve existing nuclear generation and help avoid an overreliance on natural gas.

The transportation sector is the leading contributor to US heat-trapping emissions today — producing nearly 30 percent of all US global warming emissions.[21] Light-duty vehicles—cars and light trucks—emit the most global warming emissions, nearly 60 percent, and medium- and heavy-duty trucks account for about a quarter of emissions in the transportation sector.[22] Rapid decarbonization of the transportation sector is essential and can be achieved by cleaning up the vehicles and fuels of today—through strong fuel economy and greenhouse gas emissions standards and reducing the carbon content of fuels—and rapidly transitioning to electrification.

Cleaning up Current Technologies: As we move toward increased transportation electrification, we must also ensure the vehicles of today emit fewer heat-trapping emissions and go further on a tank of gas. The Obama-era vehicle emissions and fuel economy standards, which, by 2030, are expected to reduce carbon dioxide emissions by around 500 million tons, are an important part of decarbonization,[23] and unfortunately the Trump Administration is seeking to roll them back.[24]

Transitioning to Electrification: To more rapidly reduce emissions in the sector, we must electrify our transportation system. Electric vehicles, on average, emit about half of the global warming emissions as a conventional car, which can significantly reduce emissions from cars and light trucks.[25] In the United States, for example, the average EV running on electricity will generate 3.3 tons fewer carbon dioxide equivalent emissions per year than an average car powered by gasoline[26], and EVs keep getting cleaner thanks due to the grid getting cleaner .[27] Medium and heavy-duty vehicles, which include buses, must also move toward electrification to help reduce both global warming emissions and criteria pollution. Electric buses, on average,

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[20] https://www.ucsusa.org/nuclear-power/cost-nuclear-power/retirements
[21] https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions
[22] https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions
[23] https://www.ucsusa.org/clean-vehicles/fuel-efficiency/clean-car-standards.html
[24] https://blog.ucsusa.org/jonna-hamilton/congress-investigates-rollback-of-clean-car-standards
[25] https://www.ucsusa.org/sites/default/files/attach/2015/11/Cleaner-Cars-from-Cradle-to-Grave-full-report.pdf
[26] https://blog.ucsusa.org/jonna-hamilton/will-congress-extend-ev-tax-credit
[27] https://blog.ucsusa.org/dave-reichmuth/new-data-show-electric-vehicles-continue-to-get-cleaner

produce less than half of the global warming pollution of buses running on diesel or natural gas.[28]

Making Fuels Cleaner: Finally, we must focus on making both conventional and alternative fuels cleaner. Low-carbon alternatives to gasoline are becoming more readily available and all fuels could make their operations more efficient and trap more heat-trapping gases in their processing.[29] We must make smart policy choices to ensure biofuels continue to get cleaner and hold oil companies accountable for extraction and refining practices that contribute to increased global warming pollution.[30]

While light-duty and medium-and heavy-duty vehicles are the largest contributors to US global warming emissions in the transportation sector, to get to net zero emissions reductions must be achieved for all sources, including aircraft, rail, and ships, through better fuel efficiency and cleaner fuels.

Done right, an economywide low-carbon energy transition **can also help address long-standing inequities for low-income communities and communities of color**—cutting the harmful pollution from fossil fuels that has disproportionately affected these communities and enabling them to partake in all the public health and economic advantages of a clean energy economy. For more, please refer to the *Equitable and Just National Climate Platform* which advances the goals of economic, racial, climate, and environmental justice to improve the public health and well-being of all communities, while tackling the climate crisis.[31]

The transition away from fossil fuels will disproportionately affect workers and communities dependent on them today. The reality is that coal is already on the decline due to market factors, primarily the low cost of natural gas. We're seeing record coal retirements year-on-year regardless of climate policies. So, **we must invest in just transition policies for fossil-dependent workers and communities**. This includes help with worker training, pensions and medical care for those at the end of their careers, direct investments to spur economic diversification in communities—all while engaging directly with communities so that they can shape their future. For a more detailed discussion of policies and resources needed to ensure that working people are front and center as we create a new economy, please see the BlueGreen Alliance's *Solidarity for Climate Action* platform.[32]

We need a robust suite of policies to drive a diverse set of zero-carbon solutions

The middle of the century can seem a long way off, but the reality is we have to implement policies right now to drive down emissions in line with an ambitious long-term deep decarbonization pathway and to avoid locking in long-lived carbon-intensive infrastructure. Getting to net zero will require a suite of policies across the economy, above and beyond business-as-usual. A comprehensive suite of policies to address emission reduction opportunities

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[28] https://blog.ucsusa.org/jimmy-odea/electric-vs-diesel-vs-natural-gas-which-bus-is-best-for-the-climate
[29] https://www.ucsusa.org/clean-vehicles/clean-fuels/transportation-fuels-future
[30] https://www.ucsusa.org/clean-vehicles/clean-fuels/transportation-fuels-future
[31] See https://ajustclimate.org/
[32] See https://www.bluegreenalliance.org/work-issue/solidarity-for-climate-action/

throughout the economy should include: a price on carbon; a low-carbon electricity standard; tax incentives for zero-carbon technologies and energy storage; investments in a modern grid that can help integrate high levels of renewable energy; energy efficiency policies; policies to cut transportation sector emissions, including increasing fuel economy and heat-trapping emissions standards for vehicles, increased investments in low-carbon public transportation systems, such as rail systems; replacing gas-powered public bus fleets with electric bus fleets; incentivizing deployment of more electric vehicles, including through investments in charging infrastructure; and research on highly efficient conventional vehicle technologies, batteries for electric vehicles, cleaner fuels and emerging transportation technologies; Policies to cut emissions from the buildings and industrial sectors, including efficiency standards and electrification of heating, cooling, and industrial processes; Policies to increase carbon storage in vegetation and soils, including through climate-friendly agricultural and forest management practices; Investments in research, development, and deployment of new low-carbon energy technologies and practices; Measures to cut emissions of methane, nitrous oxide, and other major non-CO_2 heat-trapping emissions; and Policies to help least developed nations make a rapid transition to low-carbon economies. Investing in just and equitable policies to ensure that the benefits of a clean energy economy are shared by all is also critical.

We need to get moving today scaling up the many solutions we already have on hand, even as we invest in innovation to develop the next generation of zero-carbon technologies. It's a both/and proposition, not either/or.

A well-designed renewable electricity standard or low-carbon electricity standard or carbon price could go a long way toward driving more zero-carbon electricity onto the grid. UCS modeling of an escalating carbon price starting at $25/ton and a 95%-by-2050 LCES shows that both policies could achieve at least 50% renewable electricity by 2035. Similarly, a new UCS analysis shows that a national renewable electricity standard (RES) of 50% by 2035 would boost the economy, benefit consumers, and put the nation on a pathway to decarbonize the power sector by 2050.[33] Over the past decade, the renewable energy share of US electricity sales has grown by nearly 1% per year, on average, according to Energy Information Administration (EIA) data. A 50% RES would more than double that rate through 2035—an aggressive but achievable level consistent with the commitments adopted by leading states and recent analyses showing we can ramp-up to renewables to 80% of US electricity by 2050 and meet mid-century decarbonization goals.[34,35,36]

A robust and well-designed price on carbon could also raise revenues to address equity considerations related to climate change such as funding for economic investment in coal-dependent communities, including worker transition assistance; energy bill assistance for low-

[33] https://www.ucsusa.org/sites/default/files/attach/2019/06/UCS-National-RES-Analysis-6-26-f.pdf
[34] https://www.nrel.gov/docs/fy19osti/71913.pdf
[35] https://blog.ucsusa.org/steve-clemmer/u-s-renewable-electricity-future-is-within-reach
[36] (see https://www.ucsusa.org/sites/default/files/attach/2016/11/UCS-Deep-Decarbonization-working-paper.pdf; https://blog.ucsusa.org/rachel-cleetus/seven-things-ipcc2018; and https://www.evolved.energy/single-post/2019/05/08/350-ppm-Pathways-for-the-United-States)

and fixed-income households; and investments in climate resilience especially targeted to frontline communities in the US and in developing nations.

It's important to recognize that, designed well, these three policies can help achieve similar emissions outcomes in the power sector. To get economywide emissions reductions, we need a suite of policies—there are no silver bullet solutions. For example, to enable the rapid build-out and integration of zero-carbon electricity resources, we also need to invest in modernizing our transmission grid. We also have to invest in research, development and deployment of a portfolio of the next generation of solutions—with the understanding that there are risks that some of these investments may not come to fruition in time or may come with serious social or environmental tradeoffs that must be carefully evaluated in consultation with affected stakeholders.

Congress is already considering these types of policies: For example, a recent renewable electricity standard proposal from Senator Udall focused on ramping up renewables through 2035; Senator Smith proposed a Clean Energy Standard, focused on decarbonizing the power sector by mid-century by deploying a suite of low and zero-carbon resources; there have also been a range of carbon pricing proposals introduced in Congress. The extension of tax credits for renewable energy, energy storage and electric vehicles are also under active consideration.

It's now time for bold and comprehensive action.

Our choices today will determine the kind of climate future we leave our children and grandchildren. Last week UCS released an analysis, *Killer Heat in the United States* that shows the rapid, widespread increases in extreme heat that are projected to occur across the country due to climate change, including conditions so extreme that a heat index cannot be measured.[37] Last week we also saw an incredibly widespread heatwave blanket much of the US and subject 290 million Americans to hazardous heat conditions over 3 days; at least 6 people died from exposure to this heat. What our work quite alarmingly shows is that those 3 days are nothing compared to the frequency of dangerous heat days we could face in the not-distant future.

Without global action to reduce heat-trapping emissions, by midcentury (2035-2065), the number of days per year when the heat index exceeds 105 degrees Fahrenheit would quadruple from historical levels (1970-2000) such that more than 150 of our larger cities across the country (cities with a population greater than 50,000) would experience an average of 30 or more days per year with a heat index above 105. That is compared to 3 such cities today. In that same mid-century timeframe, in the average year parts of Florida and Texas would experience more than 50 consecutive days with a heat index over 100F. By late century, areas that today are home to 180 million people (~60% of the current population) would experience >30 days / year on average with HI conditions >105 degrees (compared to <1 million people historically). By late century about 120 million people across the US—more than one-third of today's population—

[37] Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days. Online at https://www.ucsusa.org/global-warming/global-warming-impacts/killer-heat-in-united-states

would experience the equivalent of a week or more of conditions so hot they exceed the National Weather Service's current heat index scale.

The intensity of the coming heat depends heavily on how quickly we act now to reduce heat-trapping emissions. These results highlight **a stark choice: We can continue on our current path, where we fail to reduce emissions and extreme heat soars. Or we can take bold action *now* to dramatically reduce emissions and prevent the worst from becoming reality**.

Our nation just celebrated the 50th anniversary of humans landing on the moon, an amazing testament to American vision, ingenuity and courage. That's the can-do spirit we must bring to the challenge before us. We are greatly encouraged to see this committee take up the important topic of decarbonizing the US economy and look forward to seeing robust legislation enacted in Congress as soon as possible.