

Confronting Global Warming in the US: Is It Too Late?

Kenneth J. Warren / *The Legal Intelligencer*

Global warming presents the most important environmental challenge of our generation. In the past, the United States has responded to environmental dangers only after a crisis occurs. Burning rivers, abandoned drums of hazardous waste and massive oil spills each resulted in new environmental legislation. Yet unprecedented drought in the western United States, intense hurricanes and floods, and rising sea levels have to date not engendered the same widespread support for action as occurred in previous crises.

The international community has responded more aggressively, although the sufficiency of its efforts is in doubt. In November 2022, the United Nations Climate Change 27th Conference of the Parties (COP27) recognized the importance of limiting global warming to 1.5°C (2.7°F) to avoid the most serious effects of climate change, and “devastating economic and noneconomic losses.” The parties recognized that achieving this goal will require reductions in global greenhouse gas emissions of 43% by 2030 relative to the 2019 emissions level. Annual global investments in renewable energy of at least \$4 trillion until 2030 are necessary to reach the goal of net-zero emissions by 2050. This staggering sum needed to transform economies from reliance on fossil fuels is separate from the amounts the parties committed at COP27 for payments to vulnerable countries for loss and damage funding.

Conversion of energy generation to renewable energy is not the sole action needed to limit global warming and its effects. Conservation and enhancement of natural systems such as forests, mangroves, and biodiverse species are part of the solution because they sequester carbon or reduce the impacts of climate change on ecosystems. An additional substantial financial commitment is necessary to address these reforms. It is questionable whether all of the needed funds can be raised. As the United Nations secretary general stated, “a giant leap on climate ambition” is required.

Global warming is an international crisis—the United States is not immune. Unprecedented drought and higher temperatures in the western United States result in hotter and more frequent forest fires. Water needed for agricultural, hydropower, public water supply and other uses is becoming increasingly scarce in large parts of the country. Sea level rises while oceans warm and acidify. Extreme weather events including hurricanes and tornados create floods and destruction, damaging energy, transportation, water and wastewater infrastructure. We are experiencing these catastrophic events in personal losses of loved ones, communities and our sense of safety.

The need for immediate action is a recurring theme of the federal National Climate Assessment. To examine the effects of global warming on the United States, federal agencies and scientists are required by federal law to issue the National Climate Assessment every four years. With some delay caused by actions of the Trump administration, the fifth National Climate Assessment report is scheduled to be issued in 2023. A draft of the report is available on the website [GlobalChange.gov](https://www.globalchange.gov) and is open for public comment until Jan. 27, 2023. Although the draft is subject to change based upon public comment, its contents are generally consistent with previous climate assessment reports. The scientific consensus is that, notwithstanding mitigation and adaptation measures taken to date, prompt action is required to avoid the worst consequences of climate change.

To meet the international goal of limiting global warming to 1.5°C, the United States must decrease its emissions by on average 6% per year and reach net-zero emissions by 2050. Our current pace of reductions does not approach this number.

Plainly much more needs to be done to change how energy is generated and how it is consumed. Our nation will require thousands of gigawatts of electricity from new renewable energy sources, primarily wind and solar, to replace existing fossil fuel sources. Individuals and businesses will need to utilize electric vehicles to avoid burning gasoline and diesel fuel.

Buildings and homes must be constructed or retrofitted to minimize energy consumption and to rely on heat exchangers and electric-based heating and cooling systems. Land must be managed to store or reduce emissions of carbon. To the extent new technologies such as those involving carbon capture and sequestration become available or new nuclear electric generation facilities are feasible, their deployment can assist in the transition to clean energy. But given the bipartisan gridlock in Congress over fossil fuel issues, and the U.S. Supreme Court's decision in *West Virginia v. EPA* limiting the authority of administrative agencies to transform the economy from fossil fuels to renewables absent clear statutory language, ending fossil fuel use seems a distant goal.

The Biden administration's initiatives to date will likely effectuate some of the necessary emission reductions. Without Republican support, Congress enacted the Inflation Reduction Act, which is largely a clean energy bill. By providing tax credits or grants for, among other things, electric vehicles and vehicle batteries, electric vehicle charging stations, home energy improvements and production of or investment in renewable or clean energy, the Inflation Reduction Act incentivizes electrification and promotes energy efficiency. Reductions in the cost of solar and wind installations work in tandem with these government incentives. While meaningful, these incentives and cost reductions are insufficient to wean the economy from fossil fuels.

States and municipalities can help to make up the difference. In Pennsylvania, the Wolf administration's decision to join the Regional Greenhouse Gas Initiative that imposes a cap-and-trade system will reduce emissions from electric-generation facilities. And state renewable portfolio standards make renewable energy sources more viable. A majority of the Pennsylvania General Assembly, however, seems unwilling to support joining RGGI and is a strong supporter of the natural gas industry.

Arguably, the Pennsylvania Environmental Rights Amendment (ERA) contained in Article I, Section 27 of the Pennsylvania Constitution requires the General Assembly and municipalities to take more aggressive action. The first sentence of the ERA prohibits the commonwealth from taking any action that would infringe on citizens' right to "clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment." The second and third sentences create a public trust in which the commonwealth serves as trustee of Pennsylvania's public natural resources for the benefit of the people.

Climate change directly implicates both branches of the ERA. The natural values of the environment erode as rising sea levels and storm surges harm wetlands and aquatic species. Stormwater runoff carries pollution and sediment that degrades surface waters. Burning fossil fuels creates emissions that degrade our air. Government actions that promote or permit use of fossil fuels without off-setting reductions in emissions may be subject to challenge as contributing to harms that infringe on the rights of Pennsylvania citizens granted by the ERA. The harm to the commonwealth's public natural resources may also impose an obligation on government to mitigate and adapt to climate change. Fisheries decline due to loss of sea grasses and rising temperatures. Diminution in the quality and quantity of water resources, and loss of forests, wetlands and ecosystems, may compel action to protect these public resources and the services they provide.

Whether or not greenhouse gas emissions are eventually reduced to net zero, the effects of emissions already in the atmosphere will continue for many decades. As COP27 recognized, vulnerable populations are particularly dependent on the implementation of adaptation measures until mitigation measures take effect.

Protection of people and ecosystems from the impacts of global warming requires selection and implementation of effective adaptation tools. Erosion controls, flood protections, green stormwater infrastructure, evacuation of areas impacted by sea level risk, new and better managed water storage facilities, water and energy efficiency and conservation measures, and forest and vegetation management are among the techniques employed to create greater resiliency. Although these tools can reduce damage, they cannot succeed in avoiding serious injuries in the long run. It is critical to limit global warming to 1.5°C. Unless citizens demand prompt action by our government and the international community, it may be too late to reach this goal.

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