

November 14, 2022

Honorable Roy Cooper  
Governor of North Carolina  
116 West Jones St.  
Raleigh, NC 27603

Lynn J. Good  
President and Chief Executive Officer  
Duke Energy Corporation  
550 South Tryon Street  
Charlotte, NC 28202

*Subject: Scientists' appeal for North Carolina to close,  
not expand, fossil fuels for electricity*

Dear Governor Cooper and President Good:

We, the undersigned scientists, respectfully seek your action to halt plans for greatly increasing the use of natural gas in coming decades to generate electricity. Such plans are completely out of step with the science reflecting the urgent need to phase out fossil fuels, and with North Carolina's efforts to help slow the climate change that has increasingly harmed thousands of state residents.

With this appeal, we seek to create a cooperative path forward so that North Carolinians can work together to truly join those around the world doing all possible to prevent catastrophic global warming from becoming irreversible.

Duke Energy's draft carbon plan, now under review by the state utilities commission, includes various scenarios that are supposed to lead to net zero carbon dioxide emissions by 2050. Each scenario, however, includes thousands of megawatts of new electricity generation from burning natural gas, which is mostly methane. This would lock in costly new infrastructure that will emit both methane and carbon dioxide for decades, worsening the climate crisis and directly harming public health as methane emissions lead to formation of toxic ground-level ozone.

Our current global energy infrastructure already locks in more CO<sub>2</sub> emissions than is consistent with the target of limiting warming to 1.5 degrees Celsius above pre-industrial levels. Therefore, we simply cannot build any more fossil fuel power plants and other supporting infrastructure, and must instead move toward retiring those already in place. This conclusion is supported by both the Intergovernmental Panel on Climate Change<sup>1</sup> and the International Energy Agency.<sup>2</sup>

Thus, North Carolina must close all coal-burning power plants this decade and begin winding down – not increasing – its use of natural gas.

---

<sup>1</sup> Intergovernmental Panel on Climate Change. Climate Change 2022: Mitigation of Climate Change, April 2022: <https://www.ipcc.ch/report/ar6/wg3/>.

<sup>2</sup> International Energy Agency. Net Zero by 2050: A Roadmap for the Global Energy Sector, May 2021: <https://www.iea.org/reports/net-zero-by-2050>.

Duke Energy indicates that it hopes to someday convert power plants from burning gas to burning hydrogen but admits that this is quite speculative; the technology might never become cost-effective or climate-friendly (hydrogen is currently produced predominantly using energy from fossil fuels and is very expensive). Even if successful, that transition would occur mainly after 2040 according to Duke Energy's draft plan. This would leave large amounts of gas-fired generation in place for at least two decades and likely many more.<sup>3</sup>

Such an approach is entirely indefensible from a climate and public health perspective. Moreover, the longer gas-fired generation remains in place, the longer marginalized communities will bear disproportionately high and adverse risks from exposure to pollution and other harms from large transmission pipelines and related infrastructure.<sup>4</sup> The situation will prevent North Carolina from securing environmental justice for communities that shoulder an oversized share of the burden for North Carolina's increasing reliance on natural gas.

In the carbon plan docket, Attorney General Josh Stein and several other parties have produced expert analyses detailing how North Carolina can avoid building new gas-fired units, close coal-fired plants quickly and save billions of dollars by using combinations of lower-cost renewables, energy storage and efficiency programs. Similar approaches are being favored by other large US utilities and have already been demonstrated to be an economic engine that can continue to create and support tens of thousands of 21<sup>st</sup> century jobs for North Carolinians.<sup>5</sup>

Moving off fossil fuels in North Carolina would also help relieve the negative health, electricity rate and climate impacts being borne disproportionately by the state's low-income residents and communities of color.

An important additional benefit of phasing out natural gas is that reducing emissions of methane and other short-lived climate pollutants this decade will slow global warming faster than any other mitigation strategy and rapidly slow the accelerating suffering from heatwaves, droughts, superstorms and fires.

It is utilities' ongoing burning of coal and natural gas – and building of new natural gas infrastructure – that perpetuates the market for gas that is contributing to climate havoc in our state. Therefore, shrinking the market and reducing upstream emissions is the best way North Carolina can help give the world a fighting chance to prevent catastrophic changes.

Some of us have previously called on Gov. Cooper to lead a national moratorium on new natural gas infrastructure.<sup>6</sup> Because Duke Energy is one of the nation's largest electric power

---

<sup>3</sup> Powers, William E. Report on Assumptions in Duke Energy May 2022 Carbon Plan, filed in NC Utilities Commission docket E-100 Sub 179 on July 15, 2022, pp. 23-26:

<https://starw1.ncuc.gov/NCUC/ViewFile.aspx?id=bb1ca649-c866-49c7-801a-33aa2c98a0fe>.

<sup>4</sup> Emanuel, Ryan, et al. Natural Gas Gathering and Transmission Pipelines and Social Vulnerability in the United States, *GeoHealth*, Vol. 5, Issue 6, June 2021:

<https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021GH000442>.

<sup>5</sup> US Department of Energy, Office of Policy. US Energy and Employment Jobs Report, June 22:

<https://www.energy.gov/policy/us-energy-employment-jobs-report-useer> with North Carolina data at <https://www.energy.gov/sites/default/files/2022-06/USEER%202022%20-%20North%20Carolina.pdf>.

<sup>6</sup> Letter from Drew Shindell and 40 EPA alumni of the Environmental Protection Agency to Governor Roy Cooper and Duke Energy CEO Lynn Good, Sept. 14, 2020: <https://www.ncwarn.org/wp-content/uploads/ltr-9-14-20-Cooper-Good.pdf>.

providers, and is based in this state, action by both of you to change course could have sweeping, positive repercussions well beyond state borders.

Without your action, we remain concerned that North Carolina's positive climate efforts will be outmatched by Duke Energy's expanding use of natural gas.

We appeal to you both to use this crucial point in human history to rise to the unprecedented challenge posed by the climate crisis. Using our collective wisdom based on science could inspire others across the nation to redouble all efforts to create more climate success stories.

Sincerely,

Dr. Drew Shindell, Nicholas Professor of Earth Sciences, Duke University

Robert Howarth, The Atkinson Professor of Ecology & Environmental Biology, Cornell University

A. R. Ingraffea, Dwight C. Baum Professor Emeritus, Cornell University

Michael Mann, Presidential Distinguished Professor of Earth & Environmental Science, University of Pennsylvania

William H. Schlesinger, Dean, Emeritus, The Nicholas School of the Environment, Duke University

Orrin H. Pilkey, Professor Emeritus of Earth and Ocean Sciences, Duke University

Ryan E. Emanuel, Associate Professor, Nicholas School of the Environment, Duke University

Dr. Ashley Ward, Senior Policy Associate, Nicholas Institute for Energy, Environment & Sustainability, Duke University

Ram Oren, Distinguished Professor of Earth Systems Science, Duke University

Wenhong Li, Associate Professor, Duke University

Avner Vengosh, Distinguished Professor of Environmental Quality, Duke University

Paul A. Baker, Professor, Duke University

Prasad Kasibhatla, Professor, Duke University

Prakash Bhave, Ph.D., Research Scientist, Duke University

J. Jason West, Professor, Environmental Sciences & Engineering, University of North Carolina at Chapel Hill

Jonathan Engel, Distinguished Professor of Physics and Astronomy, University of North Carolina

Dr. David J. DeMaster, Professor Emeritus, Department of Marine, Earth and Atmospheric Sciences, NC State University

Walter A. Robinson, Professor of Atmospheric Sciences, NC State University

Dr. Viney P. Aneja, Professor, NC State University

Dr. Howard S. Neufeld, Professor of Biology, Appalachian State University

Robert S. Young, Director, Program for the Study of Developed Shorelines

Dr. Allison J. Matzelle, PhD Student, Fellow, Northeastern University, Senate Commerce Committee

Robert I. Bruck, Ph.D., Chief Scientist, ProGro Bio. Inc.

Dr. Carl W. Sigel, Division Director, Burroughs Wellcome Co.

Glenda Chen, Research Fellow, Environmental Defense Fund

Tasha Stoiber, Ph.D., Senior Scientist, Environmental Working Group

Stephen Jurovics, Ph.D., Environmental Engineer, The Cadmus Group, Inc.

Dr. Gary K. Smith, Ph.D., Chair, Energy Working Group, North Carolina Interfaith Power and Light

*And these alumni of the US Environmental Protection Agency:*

Gerald Akland, Exposure Scientist, ORD

John Bachmann, Associate Director of Science/Policy and New Programs, Office of Air Quality Planning and Standards

David G. Cole, Environmental Scientist, Office of Air Quality Planning & Standards

Dale Evarts, Group Leader, Climate, International & Multimedia Group

Judith A. Graham, Ph.D., Former Associate Director for Health, NERL, ORD

F. Elaine Manning, Environmental Engineer, OAQPS

Melissa McCullough, Assistant Director, Sustainable and Healthy Communities Research Program, Retired, Office of Research and Development

Dr. David J. McKee, Environmental Scientist, OAQPS/OAR

David Misenheimer, Environmental Engineer, Office of Air Quality Planning and Standards

Debdas Mukerjee, Sr. Science Advisor

Bill Neuffer, Environmental engineer, OAQPS

John R. O'Connor, Deputy Director, Office of Air Quality Planning and Standards

James Rabinowitz, Ph.D., Research Physicist

Harvey Richmond, MSPHn, senior environmental analyst, OAQPS

R. Woodrow Setzer, Ph. D., Mathematical Statistician

Betsy Smith, Ph.D., Associate Director, Sustainable and Healthy Communities Research Program

James H. Southerland, Source Evaluation, USPHS, USEPA, and NC DENR/DAQ