Duke Energy's North Carolina Carbon Plan would invest in new polluting fossil fuels and rely too heavily on expensive, speculative tech.

SOUTHERN ENVIRONMENTAL LAW CENTER

WHAT IS THE NORTH CAROLINA CARBON PLAN?

The North Carolina Carbon Plan was established by bipartisan legislation in 2021. The law tasks our utilities commission with developing a plan to reduce carbon pollution from the electric power sector by 70% by 2030 and go net-zero by 2050.[1] As North Carolinians face increasing harms from climate change, the Carbon Plan is a critical opportunity to protect our communities. Being smart about the new resources we invest in will be essential to keeping power bills down and meeting climate deadlines on time.

WHAT ARE THE ENERGY TECHNOLOGIES IN DUKE ENERGY'S PROPOSED PLAN?

Regulated monopoly Duke Energy proposed a Carbon Plan that delays the 2030 carbon reduction deadline by five or more years. If approved, Duke's plan would set too slow a pace for the development of clean energy solutions like wind and solar power – while doubling down on unreliable, polluting gas plants and over-relying on expensive, speculative technologies that will likely remain commercially unavailable for decades to come.[2]

Here's why those sources raise concerns and risk taking North Carolina in the wrong direction:

Gas plants

- **Duke's proposed gas buildout, one of the largest in the country, is incompatible with a federal rule that significantly limits carbon pollution from new gas plants after 2032.[3]** By building new gas plants over the next decade, the company risks burdening customers with billions of dollars in stranded assets – the cost of infrastructure that can't serve our communities long-term.
- **Gas-burning power plants harm the climate** with carbon pollution and use fuel mainly composed of methane, a pollutant responsible for about a third of global warming and its consequences. Over a 20-year period, methane warms the climate at 80 times the rate of CO_2.[4]
- **Gas is unreliable in extreme weather.** Widespread gas-related grid failures have become disturbingly common in recent years.[5] On Christmas Eve in 2022, when Duke's gas infrastructure experienced failures during severe weather, the utility was forced to implement rolling blackouts, cutting power off from 500,000 Carolinians.[6]
- **Gas is costly.** Gas is subject to wild swings in price: when that happens, customers, not utilities, foot the bill.[7] In 2023, financial firm Lazard estimated that utility-scale solar systems paired with battery storage are economically competitive with gas plants.[8] Renewables have the added benefit of immunity to fuel price volatility, since they don't require fuel!

Small modular nuclear reactors

- **Small modular nuclear reactors (SMRs) – scaled-down nuclear plants – are not a commercially available technology.[9]** The promise that speculative technologies will solve climate change decades from now is one way that utilities try to delay the urgently needed clean energy transition while obscuring their inaction.

- **The cost of SMRs is unknown, but nuclear construction projects are notoriously prone to cost overruns and delays.** The first federally funded SMR project was recently canceled due to expenses that drove its estimated cost to over $9 billion – pushing the price of power too high for customers.[10]

Hydrogen blending

- **Hydrogen blending is the controversial concept of mixing hydrogen into gas pipes to theoretically lower climate pollution.** Hydrogen doesn't emit CO_2 when burned – but it's not always clean to produce. Almost all hydrogen produced today comes from splitting fossil fuel molecules – a polluting process that offers no benefits for our climate. Only "green hydrogen" – hydrogen derived from water and produced using zero-emissions clean energy – could have a neutral impact on our climate. But even if Duke mixes green hydrogen into its gas pipes, experts warn that overreliance on the climate technology may be an irresponsible investment.
- **Like SMRs, green hydrogen blending is not commercially available.** In Duke's proposed plan, the technology serves as a flawed justification for the continued buildout of polluting gas plants.
- **Hydrogen blending offers little climate payoff.** Hydrogen blending becomes dangerous when it makes up more than a small portion of a hydrogen-gas mix, making pipes brittle and increasing the risk of leaks and explosions. At safe levels, experts suggest green hydrogen mixed into traditional gas infrastructure could decrease gas pollution by 7% at most – too little, too late to constitute significant climate action.[11]
- **Using 100% green hydrogen in large power plants would be impractical and costly.** Duke indicates that it will run the gas plants it builds over the next decade on hydrogen by 2050 to meet the carbon neutrality requirements under state law – but running those plants solely on clean hydrogen would require building new pipelines and related infrastructure from the ground up. Duke risks passing the high cost of green hydrogen – as well as the need to maintain, retrofit, and build pipelines to support its use – onto customers.[12] A much more efficient and cost-effective route would involve using renewable energy directly on the grid and investing in alternative storage technologies to help bridge periods when the sun isn't shining or the wind isn't blowing.

WE'RE ADVOCATING FOR A NO-REGRETS CARBON PLAN.

There's **no reason** that North Carolinians should bear the consequences and costs of continued investment in polluting, unreliable energy sources on the shaky promise that expensive, unproven technologies will materialize in the future. SELC is advocating for a plan that helps ensure a safe, affordable future for our communities by complying with state and federal carbon pollution reduction requirements, phasing out polluting fossil fuels, and developing clean, cost-effective, and reliable solutions like **solar power**, **battery storage**, **wind**, and **energy efficiency**.

The Carbon Plan will be authorized by the North Carolina Utilities Commission in late 2024, after intervenors, expert witnesses, and people across North Carolina have a chance to weigh in.

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REFERENCES

[1] The 70% carbon reduction benchmark will be measured in comparison to 2005 levels.

[2] Carbon-Free by 2050: Pathways to Achieving North Carolina's Power Sector Carbon Requirements at Least Cost to Ratepayers, Synapse Energy Economics. 2022. Accessed at https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=5815f0fe-8690-4aac-86f7-f2d752c73c9b.

[3] Direct Testimony and Exhibits of Maria Roumpani. Accessed at https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=12da96a6-b43c-434d-b7af-846699825f40.

[4] Methane, Explained, National Geographic. Accessed at https://www.nationalgeographic.com/environment/article/methane-:~:text=Each%20of%20those%20puffs%20coming%20out%20of%20a,than%2080%20times%20more%20powerful%20over%2020%20years.

[5] FERC, NERC Release Final Report on Lessons from Winter Storm Elliott, FERC. Accessed at https://www.ferc.gov/news-events/news/ferc-nerc-release-final-report-lessons-winter-storm-elliott.

[6] Duke Energy Updates North Carolina Utilities Commission on Winter Storm Elliott Emergency Outage Event, Duke Energy. 2023. Accessed at https://news.duke-energy.com/releases/duke-energy-updates-north-carolina-utilities-commission-on-winter-storm-elliott-emergency-outage-event.

[7] David Boraks, Duke Energy Seeks Big Rate Increase in Central and Western NC to Cover Higher Fuel Costs, WFAE. 2023. Accessed at https://www.wfae.org/energy-environment/2023-03-01/duke-energy-seeks-big-rate-increase-in-central-and-western-nc-to-cover-higher-fuel-costs.

[8] 2023 Levelized Cost of Energy, Lazard. 2023. Accessed at https://www.lazard.com/research-insights/2023-levelized-cost-of-energyplus/.

[9] Carolinas Resource Plan, Duke Energy. 2024. Accessed at https://www.duke-energy.com/-/media/pdfs/our-company/carolinas-resource-plan/january-24-fact-sheet.pdf?rev=8e61a3e3e8c844daaf4f2d5b6635c687.

[10] M.V. Ramana, The Collapse of NuScale's Project Should Spell the End for Small Modular Nuclear Reactors, Utility Dive. 2024. Accessed at: https://www.utilitydive.com/news/nuscale-uamps-project-small-modular-reactor-ramanasmr-/705717/.

[11]Daniel Esposito, Gas Utilities are Promoting Hydrogen, But It Could Be a Dead End for Consumers and the Climate, Forbes. 2022. Accessed at https://www.forbes.com/sites/energyinnovation/2022/03/29/gas-utility-hydrogen-proposals-ignore-a-superior-decarbonization-pathway-electrification/?sh=56eaf1ac76a1.

[12] Esposito.