

I am a homeowner; we converted our house to all-electric operations last year because that made the most sense economically and for our home's resale value as both our central Air Conditioner and gas-fired furnace were reaching end-of-life.

Soon after the conversion, I joined the Climate Reality Project in advocating for smart climate policy. One of the reasons I'm doing this is that from our own experience, we know that healthful, economical, climate solutions are readily available and the biggest hurdles to meaningful climate action are lack of political courage and the enormous amounts of money that the fossil-fuel industry and other status-quo forces spend on spreading disinformation, lobbying lawmakers, and funding election campaigns.

The Climate Action Council is (1) a body of experts, and (2) not up for re-election. Therefore, we hope that the Council will not only be able to separate facts from fiction, but will also be able to issue a strong Final Scoping Plan with science-based emissions reduction (and eventually, elimination) targets, interim milestones, and enforceable implementation plans without worrying about political pushback from fossil fuel interests and other groups with a fossil mentality.

Why buildings?

Buildings account for a third of New York's GHG emissions, with space and water heating being the largest contributors. Appliances last 10-15 years; buildings can last decades. Every new building with on-site fossil-fuel combustion is an avoidable costly mistake that locks in an unpredictable and polluting fuel for generations, or will require an expensive conversion in the future.

Immediate adoption of all-electric building codes

It is widely accepted that phasing out the use of on-site fossil fuels such as heating oil and methane gas and shifting to electricity as the sole energy source for buildings, while simultaneously pursuing weatherization, energy efficiency, and improved building codes, is the only feasible path to decarbonizing building operations. Once electrified, the GHG emissions associated with buildings will decline as more distributed and centralized carbon-free sources of electricity are added to the grid.

I wholeheartedly support immediate upgrades to codes and standards in support of a net-zero future. Given the urgency of the climate situation, we need a definitive moratorium on all new fossil-fuel-based infrastructure with no allowances for expansion other than to maintain reliability during the transition to 100% electric heating. Such a moratorium is critical for preventing further delay in the transition away from fossil fuels and avoiding further harm to the planet and accumulation of soon-to-be-stranded assets.

Due to the longevity of buildings, it is critical to set the earliest possible date to mandate an all-electric construction. A mandate that goes into effect in 2024 for low-rise and 2027 for high-rise buildings is very reasonable. Note that Washington State is mandating all-electric

heating in most of its new low- and high-rise buildings starting in 2023. Netherlands is also mandating all-electric new low-rise construction in 2023 and Germany in 2024. New York City, Los Angeles, and Montreal have mandated all-electric low-rise construction starting in 2024. Therefore, a 2024 mandate for New York State is not only reasonable, but is actually not as aggressive as some of the other mandates in regions with similar climates.

Calling the bluff on false solutions

I reject the use of natural gas as a supplemental heat source “at times of peak need”. This specious exception is not a true need and serves only the special interests of natural gas companies to maintain pipeline infrastructure indefinitely and to continue to profit from harming our environment by conducting business as usual. Other ruses being used by the corrupt gas utilities to deter or slow the transition from fossil gas are fairy-tale solutions like Renewable Natural Gas and Hydrogen.

Hydrogen is completely unsuitable for domestic use! Its low energy density makes it cost prohibitive for heating because delivering the equivalent amount of energy to fossil methane would require pumping five times as much hydrogen into homes. The fact that it is hard on steel and electronics and has very different physical and combustion properties compared to fossil methane means that it will require significant infrastructure upgrades and new appliances designs that do not exist.

Renewable natural gas (RNG) is hardly renewable, is essentially methane, and will leak just like fossil methane contributing 85 times more than carbon dioxide to 20-30 year global warming. Burning it inside homes will release the same deadly indoor pollutants that are released by fossil methane. Finally, even in the best-case scenario, the total amount of available supply of the so-called renewable natural gas will displace only a fraction of the fossil gas.

No entity in New York has identified a viable strategy for decarbonizing the building sector using RNG without assuming that New York utilizes most of the theoretically available RNG across the entire Eastern United States. Setting aside whether such levels of RNG are even technically possible to obtain in New York, any strategy that relies on New York using other states' limited supplies of RNG is not a pathway to nationwide climate success.

Removing regulatory and legal obstacles to building-electrification

One major impediment to building electrification is the set of archaic laws and regulations that create an uneven playing field between gas and electric space and water heating options. The current public service law not only provides for the gas utilities to pass the cost and the risk of gas infrastructure expansion on to the ratepayers, but in many cases, it also mandates it. For example, the "100-foot rule" the “100 foot rule” (governed by 16 NYCRR §230.2(c), (d), and (e) of the Public Service Commission’s regulations) requires a gas utility to provide an applicant with a minimum length of main and service line extensions at no cost to the applicant. A conservative analysis by the New York Geothermal Energy Organization included in their

testimony submitted to the Public Service Commission shows that just this subsidy costs New York's existing gas customers at least \$200 million every year by way of additional delivery charges. This is an unconscionable subsidy for fossil gas that must end.

Utility regulation must be aligned with the State's climate justice and emissions reduction targets, and the provisions of the public service law relating to continuation of gas service must be repealed. The legal basis and subsidies driving the expansion of the gas system must be removed. The NYS Department of Public Service must adopt rules and develop a statewide gas service transition plan that is consonant with decreasing gas sales and decommissioning the gas system in stages.

Additionally, I support ending rebates for purchase of natural gas equipment. Furthermore, I support incentivizing building owners to transition to electric heating and appliances before the end of the useful life of existing equipment.

Utility thermal networks

In order to effectively decarbonize our buildings at the scale necessary to meet the CLCPA's timeline, we need to build out emissions-free thermal energy networks that share heat sinks and sources and utilize high efficiency ground source heat pumps over the next two-decades across the state. Utility-scale thermal networks can connect multiple buildings together and capitalize on thermal energy exchange using sources like geothermal boreholes, surface water and even wastewater.

Thermal energy networks will scale building decarbonization and reduce costs for customers with little impact to the electric grid even during peak periods. Utilities will be able to reduce the costs of electrifying buildings by spreading the costs of thermal networks across many customers and many years. These networks also offer a clear pathway for workers with pipe skills to transition to thermal energy networks for all-electric buildings.

In order to streamline a rapid roll out of utility thermal networks, to keep customer costs down, and to simultaneously smoothen the phaseout of gas, the cost of utility thermal networks must be added to the gas rate base. A neighborhood-by-neighborhood plan of replacing aging gas infrastructure with thermal energy networks will help transition buildings from gas to electric heating while keeping the size of the infrastructure as well as the number of supporting ratepayers more or less constant. This will not only help the new customers of these networks, but will also help prevent the delivery rates for existing gas customers from spiraling upwards.

Please note that removing a customer's legal entitlement to utility gas, governed by [16 NYCRR §230.2\(a\) of the Public Service Commission's regulations](#), is critical for the replacement of gas infrastructure with utility thermal networks. Otherwise, a single customer insisting on gas can stop the transition of an entire neighborhood.

Role of zoning, smart growth, and the built environment

While the scoping plan includes some recommendations around smart growth and TOD in the context of Transportation (Chapter 11), Land Use (Chapter 19), and Local Government (Chapter 20), it doesn't seem to make the connection between housing policy and emissions from buildings. As a result, it misses on zoning recommendations to support a built environment that helps lower energy use.

Mixed-use development, multi-family housing, and accessory dwelling units (ADUs) are key tools in our climate fight that the scoping doesn't adequately recognize. Structures that support more than a single dwelling reduce the exposed surface per dwelling, thus reducing energy demand and related emissions for space heating and cooling. Higher density will also help increase the cost-effectiveness of district heating using thermal energy networks. Mixed-use development would further improve the efficiency of these networks from loops that share heat sources and sinks.

I urge the Council to include stronger recommendations for zoning to reduce buildings emissions in the Final Scoping Plan. Zoning and planning processes must consider emissions from buildings in addition to those from transportation and land use.

Workforce development

The Jobs Study of the Just Transition Working Group estimates that meeting New York's climate goals will create 140,000 jobs related to buildings by 2030. Yet unless New York begins now to develop this workforce, trained workers will not exist to fill these jobs. The Scoping Plan must include a requirement to map out workforce development needs for building efficiency improvements and electrification statewide, and to engage the NYS Education Department, SUNY/CUNY system, community-based organizations, and workforce development, labor and private sector partners to develop and implement a strategy to recruit, train, and skill up the clean energy workforce required to decarbonize the building sector.

Conclusion

New York State must move full steam ahead, without delay, towards making electricity the principal energy source for powering its residential, commercial, and public buildings while rapidly weaning itself off on-site combustion of fossil fuels such as fossil methane gas and fuel oil. The state must eliminate all forms of subsidies that encourage the use of fossil fuels in buildings. Effective and economical solutions are available today; political will is the only hurdle in the way of building electrification in New York. Electrification and efficiency-enhancement of buildings are not only cost-effective ways of reducing emissions but also have tremendous health and economic benefits.

The Climate Action Council put forth three scenarios for our climate future. I am advocating for Scenario #3, which includes low-to-no bioenergy and hydrogen and the simultaneous

acceleration of electrification of both buildings and transportation to ensure clean air and a healthy environment.

Thank you

I want to thank the Council for its hard work and encourage it to stay steadfast in implementing the CLCPA targets without getting distracted by the multi-million dollar disinformation campaign of denial, doubt, and delay from the fossil fuel companies, gas utilities, and their trade organizations.