

BIOMASS AND BIOFUELS & 22 OTHERS

Natural gas utilities grapple with climate goals



BY MARIE J. FRENCH | 07/31/2019 05:01 AM EDT



Natural gas usage in the residential, commercial and industrial sectors — excluding what's used at power plants — accounted for roughly 22 percent of greenhouse gas emissions in 2015| AP Photo

ALBANY — Natural gas utilities, which provide heat to about 60 percent of New York's homes, are facing an existential crisis as the state seeks dramatic emissions reductions requiring transformative change in the consumption of a fuel once hailed as a cleaner and cheaper alternative to oil, propane and kerosene.

Natural gas usage in the residential, commercial and industrial sectors — excluding what's used at power plants — accounted for roughly 22 percent of greenhouse gas emissions in 2015, according to data from the New York State Energy Research and Development Authority.

To meet the state's goal of net zero emissions by 2050, as called for in the Climate Leadership and Community Protection Act, those emissions must be eliminated. Burning gas to heat homes is unlikely to qualify for offsets, given the availability of alternatives such as geothermal or air-source heat pumps that rely on electricity.

That reality poses risks and opportunities for the state's major gas utilities. What's more, it requires a major reframing of the state's policy on natural gas, which currently promotes expanded gas infrastructure.

"We have a very large investment in natural gas infrastructure that could become stranded so the first thing you do is not build more," said Michael Gerrard, director of the Sabin Center for Climate Change Law at Columbia University. "If there is a future for natural gas, there have to be ways to minimize or eliminate emissions."

New York's efforts to reduce natural gas usage will have implications and lessons for other states seeking to achieve aggressive greenhouse gas reductions in how the effort is managed and what role utilities play. In California, the city of Berkeley became the first to ban new gas hookups — making a big bet on electrification.

But shifting millions of homes and businesses away from natural gas will be difficult. In fact, it may not be possible, according to National Fuel Gas CEO Dave Bauer, who said he supports efforts to reduce emissions and argues that natural gas will have to be part of the mix in the future.

"The legislation is really well intended but I'm not sure it was particularly well thought out," Bauer said in an interview. National Fuel serves 527,000 gas customers in western New York, where about 94 percent of homes rely on gas. "These are really big numbers and the CLCPA is thin on consideration of cost or technical feasibility of a complete transition to renewables. It sets targets but to me it seems kind of arbitrary."

Gov. Andrew Cuomo's administration is aware of the need to shift its policies and begin planning for a move away from natural gas, according to an administration energy official. The regulatory framework is currently designed to expand the gas system but that's no longer the goal. The state needs to evaluate what rule changes need to be made now and will not wait to begin that analysis for the state's Climate Action Council to convene, the official said.

Cuomo has a significant opportunity, through the Public Service Commission he effectively controls, to leverage pending rate increase requests from several of the largest utilities to steer a shift away from natural gas for heating.

Con Edison, National Grid's downstate gas utilities, New York State Electric and Gas and Rochester Gas and Electric all have filed rate increase proposals within the last year. Those cases will be a key test of how Cuomo plans to meet the state's new climate goals. Environmental groups engaging in the rate plan process [have seized on](#) that possibility.

"Rigorous electrification targets will impact gas capacity needs and uses, which will in turn require thoughtful planning of the rate recovery of gas infrastructure, including whether creative financing mechanisms such as accelerated depreciation are needed in order to calculate the

appropriate useful life of an asset,” wrote Environmental Defense Fund attorneys in a public filing in June. “To date, there remains a significant disconnect between the Commission’s natural gas policies and these ambitious climate goals.”

Interested parties are awaiting a delayed report from the Department of Public Service staff on natural gas supply and demand issues and how the fuel fits in with the state’s environmental goals. It was due out July 1 and is expected to be released soon.

Some utilities already scaling back

Some utilities are already factoring in the Climate Leadership and Community Protection Act goals in their capital planning. Central Hudson, in a routine filing in July, indicated it would scale back investments in replacing pipes prone to leaking fuel starting in 2022 because of the new law.

“Continued elimination of leak prone pipe at the current rate would result in significant amount of stranded assets if the market for natural gas is eliminated by state policy in the next 30 years,” the filing states.

“The CLCPA raises questions on how state policies for natural gas infrastructure will evolve, and as such we’re obligated to consider how this may affect our future capital investments in the gas system,” said Central Hudson spokesperson John Maserjian in an email. “We will continue to assess our long-term capital investments, however we remain concerned over the cost and reliability impacts of this new policy without a defined plan to achieve these goals.”

The utility still views conversions from other fuels to natural gas as a positive for the environment and part of a transition to lower emissions, he said. Central Hudson has also scaled back gas expansion projects for customer conversions in its current rate plan, instead focusing on adding customers along existing infrastructure.

Gas utilities are entitled to recover the cost of new capital investments, plus a profit, from ratepayers. If the state seeks to eliminate the use of natural gas and a utility loses customers, the remaining customers will have to bear more costs.

Some environmental advocates have suggested a shorter “depreciation” period for gas assets. Depreciation periods are based on the useful life of an asset, determining the length over which utilities earn their return for that investment. Shorter depreciation periods would raise costs for customers in the near term but avoid potential stranded assets that utilities haven’t earned back their investment on.

That would pose a financial quandary for utilities, ratepayers and regulators. Gas-only utilities may face particular challenges because, while combined electric-and-gas utilities will see

growing electric demand, gas-only businesses may face a potential "death spiral" as more customers leave the system, leaving fewer ratepayers to bear the costs of maintaining it.

State law and policies currently require gas utilities to serve new customers, and cover a certain portion of the costs of building out pipelines, if they are able to do so. In previous years, the Public Service Commission also approved incentive programs to encourage customers to switch from dirtier fuels such as propane or oil to pipeline gas.

This is part of the deal for gas utilities — they can't refuse to supply a new home or business in exchange for a distribution monopoly over a specific territory.

When there's not enough gas supply available, however, utilities have imposed moratoriums on new "firm" customers to ensure they can reliably serve the system on the coldest winter days when demand peaks.

Con Ed has imposed a moratorium in Westchester County, and is warning of similar actions in New York City if it doesn't build additional distribution capacity there. National Grid has stopped processing applications for new service on Long Island and in its New York City territory because it projects that it won't be able to meet the additional demand in future winters if the controversial Williams Northeast Supply Enhancement pipeline isn't built.

Cuomo, who as recently as 2017 described gas as a necessary bridge fuel, was asked in a radio interview on July 19 whether the Climate Leadership and Community Protection Act blocked new pipelines like the Williams project.

"It does not block fossil fuel projects," Cuomo said. "It sets goals for the future and that's why I said the goals are nice, the actions are better... You cannot end fossil fuels until you have an alternative. You can't stop society. I can't tell you don't start your car because it burns gasoline until we have an alternative that is achievable from a market point of view and accessible."

Alternatives to heat buildings are available, as environmentalists and policymakers have recognized. But the typical electric heating options have a "missing money" problem because of up-front costs and high electric rates. For the residential sector, NYSERDA has also concluded that converting from gas to heat pumps is not cost-effective.

"For buildings, converting from natural gas to electric heat pumps could be controversial, too, because the up-front costs are high and the logistics are difficult — doing so would require swapping out boilers in millions of homes and businesses," [notes a McKinsey report on the state's climate measure](#).

"The target of net zero is set for 2050, not tomorrow, and the heating sector is going to be one of the sectors that needs to get further developed from a technology and a policy perspective," said Ken Kimmell, president of the Union of Concerned Scientists.

The state is promoting heat pumps as a promising technology to reduce emissions from buildings, along with extensive energy efficiency measures. Utilities are being required to support the deployment of heat pumps statewide, although the structure of incentive programs is still being worked out ahead of a 2020 targeted rollout.

Utilities are pushing for flexibility in budgets, targets and incentive structure to meet the state targets because of different dynamics in their service areas.

Bauer said current air-source heat pump technology won't be as effective in the colder climate of western New York and geothermal poses additional challenges because of space requirements and cost.

"It gets challenging to advocate for something that doesn't work. It's not a practical source of heat," Bauer said.

Path forward remains unclear

The exact pathway for the state to achieve its goals is unclear, as critics have noted and supporters have acknowledged. Utilities plan to engage in the development of the regulations and policies to come over the next two years, as will environmental advocates and other industries.

In the near term, state policymakers are focused on efficiency measures and converting customers who still use petroleum-based fuels, such as oil or propane, to electric heating alternatives. Encouraging electric options for new construction is also key, according to a Cuomo energy official. The goal is to drive increased adoption to ultimately drive down costs to where heat pumps are competitive with gas and have existing gas customers make the transition when they change out boilers.

Just 8 percent of emissions in 2015 were from the combustion of those fuels in homes, commercial buildings and for industrial purposes, according to NYSERDA's greenhouse gas inventory.

The total amount of carbon and other greenhouse gases from those sources was cut in half by 2015 from 1990 levels, while the use of and emissions from natural gas has risen.

Overall, emissions from the building sector declined since 1990 by about 24 percent. That's partly because of lower emissions from electric generation, which is also tied to the rise in natural gas plants, and the uptake of gas for other energy needs.

The push to electrify the building and transportation sectors also has significant implications for the state's electric system, which Cuomo wants to make carbon free by 2040. If heating relies on

electricity on the coldest winter days, reliability and resiliency of the system become even more important.

Rising winter electric demand may also require massive infrastructure buildout. Con Edison estimates that “greater year-round and winter reliance on electric grid infrastructure will easily double current summer-peak demand,” spokesperson Mike Clendenin said in a statement.

“Making careful and strategic electric-grid investments will be important to meeting increased demand and to allow adequate system maintenance and repair,” he said, adding that Con Ed should be part of the Climate Action Council.

New York's electricity generation is also heavily reliant on natural gas. The [state's grid operator has concerns](#) about balancing a growing amount of intermittent renewables that are less controllable and predictable with resources that can respond quickly and run for long periods without needing to recharge — currently, traditional fossil fuel plants.

Some technologies are on the horizon that could shift the conversation around natural gas, and [utilities are actively exploring](#) them.

Renewable electricity generated when demand is low could be converted into fuel, then stored and burned when demand rises and wind or solar aren't available. Renewable natural gas, captured methane from manure or other waste, could be injected into the pipeline system. The Cuomo energy official expects renewable natural gas to be used more for transportation or industrial applications, where there are fewer alternatives, rather than buildings.



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