May 4, 2021

VIA ELECTRONIC MAIL
LULG@dos.ny.gov

Sarah Crowell, Director of the Office of Planning Development &
Community Infrastructure, NYS Department of State
Chair, Land Use & Local Government Advisory Panel
Of The Climate Action Council

RE: Comments of the Utility Consultation Group on the Land Use & Local Government Advisory Panel, Adaptation & Resilience Group's Recommendation with Respect to Existing Natural Gas Infrastructure

Dear Chair Crowell,

On behalf of the Utility Consultation Group ("UCG"),[1] please accept the following comments in support of certain of the Land Use & Local Government Advisory Panel's Adaptation & Resilience Working Group's ("Adaptation & Resilience Group") proposed policy recommendations for the Climate Action Council ("CAC"). Consistent with the UCG's stated and continued support of New York's clean energy and climate goals, these comments build on their prior commitment to be leaders in working toward a cleaner energy system with reduced greenhouse gas ("GHG") emissions.[2]

I. The Adaptation & Resilience Group's Proposed Recommendation to Ensure Reliability, Resilience and Safety of a Decarbonized Energy System is Critical to Achieve Responsible Decarbonization in the State

The Adaptation & Resilience Group's proposed recommendation to "ensure the reliability, resilience and safety of a decarbonized energy system" is premised on the important acknowledgement that while electrification has many benefits it comes with concerns of grid failure caused by, among other things, climate hazards that are increasingly severe. As a result of this concern, the Adaptation & Resilience Group appropriately identifies as a component required for delivery of this recommendation the need to "develop a comprehensive strategy for transition of existing natural gas infrastructure to [renewable natural gas] RNG or hydrogen to ensure reliability and resilience."

---

[1] For purposes of these comments, the UCG includes the following: The Brooklyn Union Gas Company d/b/a National Grid NY; Central Hudson Gas & Electric Corporation; Consolidated Edison Company of New York, Inc.; KeySpan Gas East Corporation d/b/a National Grid; Municipal Electric Utilities Association of New York; National Fuel Gas Distribution Corporation; New York State Electric & Gas Corporation; Niagara Mohawk Power Corporation d/b/a National Grid; Orange and Rockland Utilities, Inc.; and Rochester Gas & Electric Corporation.

[2] The state has recognized the value that New York's investor-owned utilities can bring to achieve the state's clean energy and climate goals, including the targets articulated in the Climate Leadership & Community Protection Act ("Climate Act"). *See e.g.* Chapter 58 (Part JJJ) of the laws of 2020, § 7 (2) (the "Accelerated Renewable Energy Growth and Community Benefit Act") (calling upon the New York State Public Service Commission (the "PSC"), in consultation with, among others, investor-owned utilities, to conduct a comprehensive study of the state's bulk, distribution, and local electric transmission infrastructure).

A. The UCG, and Numerous Studies, Support the Adaptation and Resilience Group's Recommendation

The UCG strongly supports this recommendation by the Adaptation and Resilience Group. Even as New Yorkers use less natural gas, the gas transmission and distribution system is an existing, valuable asset that can enable a reliable and resilient low-carbon energy pathway. As recent third-party studies of the potential approaches to achieve the state's 2040 net zero carbon emissions goal for the electric generation sector have noted, having some form of low- or no-carbon renewable gaseous fuel (*e.g.*, RNG and/or green hydrogen produced from renewable electricity) that is delivered through existing natural gas infrastructure will help ensure electric system reliability and resilience and will reduce the total cost of achieving the Climate Act's emissions reduction targets.[3] Last month, the Center on Global Energy Policy at Columbia University ("CGEP") issued a study that is supportive of use of the pipeline system to help meet emissions reduction targets.[4] In its study, CGEP notes

> [R]etrofitting and otherwise improving the existing pipeline system are not a choice between natural gas and electrification or between fossil fuels and zero-carbon fuels. Rather, these investments in existing infrastructure can support a pathway toward wider storage and delivery of cleaner and increasingly low-carbon gases while lowering the overall cost of the transition and ensuring reliability across the energy system. In the same way that the electric grid allows for increasingly low-carbon electrons to be transported, the natural gas grid should be viewed as a way to enable increasingly low-carbon molecules to be transported.

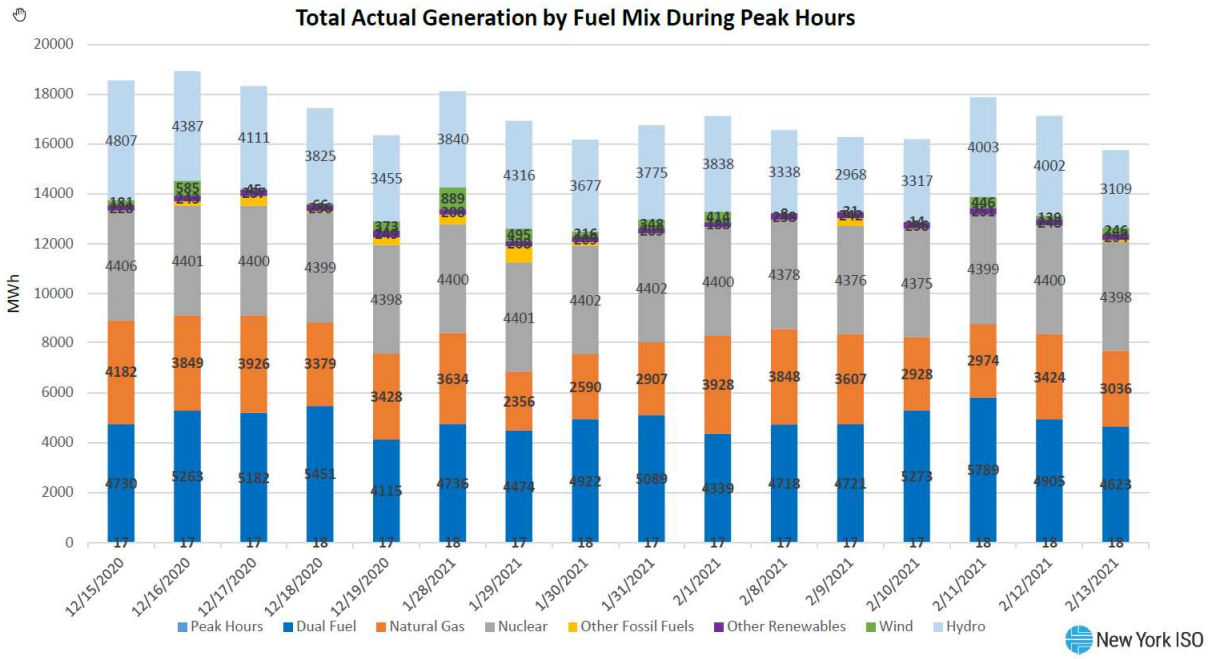
---

[3] *See e.g.* Energy + Environmental Economics ("E3"), *New York State Decarbonization Pathways Analysis, Summary of Draft Findings* (Dated June 24, 2020), available at: https://climate.ny.gov/Meetings-and-Materials (Last Accessed April 24, 2021) (the "E3 Report Presentation"); Energy + Environmental Economics, Pathways to Deep Decarbonization in New York State (Dated June 24, 2020), available at: https://climate.ny.gov/Climate-Resources (Last Accessed April 24, 2021) (the "E3 Report"); The Brattle Group, *New York's Evolution to a Zero Emission Power System—Modeling Operations and Investment through 2040 Including Alternative Scenarios* (Dated June 22, 2020), available at: https://www.nyiso.com/documents/20142/13245925/Brattle%20New%20York%20Electric%20Grid%20Evolution%20Study%20-%20June%202020.pdf/69397029-ffed-6fa9-cff8-c49240eb6f9d (Last Accessed April 24, 2021) (the "Brattle Report"). This result follows from a reduced need for total additional renewable generation. Additionally, a balance of lower emission options within the home, including keeping natural gas and the natural gas system in the mix, will ensure continued reliability and can help mitigate transmission buildout to the level of a winter heating peak and preserve needed resilience benefits for consumers in cold climates.

Moreover, the Department of Public Service Staff ("Staff") issued a gas system planning proposal earlier this year that details Staff's similar belief that existing natural gas infrastructure will continue to have a purpose in the State's energy future, including for the transport of RNG. *See* Case 20-G-0131, *Proceeding on Motion of the Commission in Regard to Gas Planning Procedures*, Staff Gas System Planning Process Proposal (Filed Feb. 12, 2021), at 2, 14-15, 17, and 27.

[4] Center on Global Energy Policy at Columbia University, *Investing in the US Natural Gas Pipeline System to Support Net-Zero Targets* ("CGEP Report"), (April 2021), available at https://www.energypolicy.columbia.edu/sites/default/files/file-uploads/GasPipelines_CGEP_Report_042221.pdf (Last Accessed April 24, 2021).

This study by the CGEP, as well as the E3 and Brattle studies, support the Adaptation & Resilience Group's recommendation. Decarbonization of the state's energy system will not diminish the importance to customers and society of reliable and resilient energy delivery.[5] To the extent the state relies solely on electrification to achieve decarbonization, it has the potential to drive up the need for new generation and associated electric transmission and would necessitate a corresponding proliferation of energy storage to support system reliability if there are extended periods when the output of renewable generation is very low. The following chart from the recent NYISO Winter 2020 – 2021 Cold Weather Operations summary illustrates the limited availability of wind and other renewables during peak hours even during this early stage of renewable buildout.[6] As the percentage of renewable generation increases, it is likely that additional steps will need to be taken to support reliability, particularly in the absence of available dispatchable resources and/or sufficient storage capability.



Installing the amount of battery energy storage needed to maintain system reliability during extended duration (days not hours) seasonal mismatches between energy demand and supply would require massive and costly investments in batteries and associated storage projects. In contrast, adapting existing pipeline systems to accommodate RNG or hydrogen for delivery to dispatchable power plants or to dual-fuel electric/low-carbon fuel heat pumps at customer premises may be a more feasible solution during a period of low renewable generation and/or for emergency

[5] The 2021 Draft Gold Book report recently issued by the New York Independent System Operator ("NYISO") includes valuable information regarding the impact of electrification on load forecasts and the likelihood that the state's energy system converts to a winter peaking system in the future. NYISO, *2021 Draft Gold Book* (April 2021), available at https://www.nyiso.com/documents/20142/21168966/2021-Gold-Book-Forecast-Graphs.pdf (Last Accessed May 4, 2021).

[6] NYISO, *Winter 2020-2021 Cold Weather Operations* (March 31, 2021), available at https://www.nyiso.com/documents/20142/20282347/04%202020%20-%202021%20Cold%20Weather%20Operating.pdf/14537941-6599-87b7-ea24-5f64483642d1 (Last Accessed April 30, 2021).

heat during widespread storm or weather events.[7] Indeed, the consultants at E3 have recognized the problems that could arise as a result of precluding New York from incorporating new low- and no-carbon fuel technologies into its energy mix, including impacts on system reliability and higher energy prices.[8] The Adaptation and Resilience Group's recommendation to develop a comprehensive strategy for transition of existing natural gas infrastructure to RNG or hydrogen to ensure reliability and resilience is consistent with these third-party expert recommendations.[9]

B. RNG is Abundant in and Around New York, and the Potential for Hydrogen is Being Actively Explored in the US and Abroad

The Adaptation & Resilience Group's vision of using natural gas infrastructure to transport RNG and hydrogen to promote reliable and resilient decarbonization is achievable. Studies have demonstrated that there is and will be significant amounts of available RNG in and around New York. For example, according to a recent study performed for the American Gas Foundation by ICF, a global consulting services company, New York will have an estimated in-state RNG potential in 2040, produced via anaerobic digestion of organic materials, of between 29.1 trillion Btu/year, in the low scenario, up to a technical potential of 94.4 trillion Btu/year from available landfill, animal manure, wastewater treatment and food waste resources.[10] ICF also estimates that in the future, the production of RNG via thermal gasification methods could increase available in-state RNG by approximately an additional 23.9 to 176.7 trillion Btu/year utilizing agricultural residues, forest residue, municipal solid waste resources and energy crops.[11] There are additional and increasing amounts of RNG available if one also looks outside the state. According to the aforementioned ICF study, the Middle Atlantic and New England regions of the Northeast will have an estimated RNG potential by 2040 of between 172.8 trillion Btu/year, in the low scenario, up to a technical potential of 952 trillion Btu/year. Thus, based on natural gas consumption in New York as identified by the U.S. Energy Information Administration ("EIA"), the in-state RNG

---

[7] Additionally, for some hard-to-electrify segments (*e.g.*, specific industrial processes; older, historic buildings prevalent in New York City), access to a low- or no-carbon fuel delivered through a modified natural gas delivery system may be the most timely and cost-effective path to decarbonization.

[8] *See e.g.* E3 Report, at 45. For example, E3's report and presentation to the CAC last year concluded with the important acknowledgment that flexibility along multiple heating sources (*i.e.*, RNG and electric) is key to maintaining system reliability and reducing cost, particularly when faced with the difficult challenge during New York's winter periods of high heating loads and low renewable energy production (E3 Report, at 45).

[9] The New York City Mayors Office of Sustainability, National Grid and Con Edison recently published a study wherein three pathways by which New York City can achieve carbon neutrality by 2050 are explored ("NYC Study"). All three pathways identify RNG as a necessary part of meeting the City's decarbonization goals. A key finding of the study is that "[i]n addition to finding a solution for buildings that do not electrify, a low carbon gas network improves overall system reliability by offering optionality and flexibility within the energy system." *Pathways to Carbon-Neutral NYC: Modernize, Reimagine, Reach* (April 2021), available at https://www1.nc.gov/assets/sustainability/downloads/pdf/publications/Carbon-Neutral-NYC.pdf (Last Accessed April 30, 2021).

[10] American Gas Foundation Study prepared by ICF, *Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment* (December 2019), available at https://gasfoundation.org/2019/12/18/renewable-sources-of-natural-gas/ (Last Accessed April 24, 2021).

[11] The recent NYC Study takes a conservative view on RNG potential, choosing not to include in its evaluation RNG produced through gasification methods.

technical potential would represent about 19% of total natural gas consumption in 2040.[12] Of course, this percentage would likely be higher in light of the reductions in natural gas usage that will occur over time due to energy efficiency, electrification of some space heating, and related initiatives. The state in the past has allowed out-of-state renewable generation to contribute meaningfully to meeting renewable electric generation targets, and there is no reason not to look beyond New York's borders for low-carbon fuels like RNG produced in the northeast region to meet Climate Act targets.

Experts are also optimistic about hydrogen's ability to contribute to responsible decarbonization in the future, and there are significant efforts in New York, at the federal level and globally to determine the potential of this technology. For example, the New York State Energy Research and Development Authority ("NYSERDA"), New York's Stony Brook University, and National Grid are currently working on a first-of-its-kind demonstration in the United States that will include the production of hydrogen, by zero- or negative-carbon means, to be utilized for storage and power to gas. This project will produce hydrogen for use in National Grid's gas distribution system, and any excess hydrogen produced will be sold to generate revenues to offset the costs incurred. Up to 10% of the hydrogen from the project can be blended with RNG for use as well. In addition, Columbia University's CGEP is partnering with National Grid on a new hydrogen program that will tackle three core aspects of hydrogen development and deployment: (i) technology and economics, (ii) use cases and applications, and (iii) policy design. The program will engage business, industry, and government leaders by creating a new technology lab and developing various hydrogen roadmaps.

The United States Department of Energy recently allocated more than $10 million to support a new industry collaborative, the HyBlend Project, to fund accelerated research on blending hydrogen into natural gas distribution systems. The funds will primarily be allocated to six national laboratories, each with its own area of focus.[13] National Grid is involved in this project, as well as several other energy companies. The project's high-level objectives include evaluation of: (i) hydrogen compatibility of pipeline materials, (ii) life-cycle emissions analysis of technologies; and (iii) techno-economic analysis to quantify costs.

An examination of hydrogen's decarbonization potential has progressed even further in Europe than in the United States. For example, the European Commission has issued a strategic road map with ambitious targets for hydrogen in Europe, involving the re-use/re-purposing of Europe's existing natural gas infrastructure, and acknowledging that hydrogen can be used as a feedstock, a fuel or an energy carrier and storage, and has many possible applications across industry, transport, power and building sectors.[14] In addition, a number of European infrastructure companies, supported by Guidehouse, a global energy consultant, just published an updated and

---

[12] U.S. EIA, State Energy Data System Table C1. Available at: https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_sum/html/sum_btu_1.html&sid=NY (Last Accessed May 2, 2021).

[13] *See* https://www.nrel.gov/news/program/2020/hyblend-project-to-accelerate-potential-for-blending-hydrogen-in-natural-gas-pipelines.html [last accessed April 24, 2021])

[14] *See* https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf?utm_source=emailmarketing&utm_medium=email&utm [last accessed April 24, 2021

extended vision of a European Hydrogen Backbone (i.e., pipeline network), now spanning twenty-one European countries instead of the originally envisioned ten countries.[15] Acknowledging that "gas infrastructure could be freed-up for the transportation of hydrogen as over time, hydrogen will become a competitive commodity and energy carrier with a key role in the future energy system," the report presents hydrogen infrastructure maps for 2030, 2035 and 2040 depicting a dedicated hydrogen pipeline transportation network largely based on repurposed existing gas infrastructure. Like Europe, the US has a highly developed system of pipelines that can be repurposed to deliver fuels such as hydrogen and RNG.

II. Conclusion

The Climate Act has significant requirements to decarbonize our New York economy. To achieve these requirements a "no regrets" approach to leave all emerging technologies as possible tools in the total solution set is necessary. As noted by Columbia University's CGEP, the pipeline network could help in reaching net-zero emission goals more quickly and cost effectively[16] and, as recognized by the Adaptation & Resilience Group's recommendation, could facilitate achievement of the Climate Act's targets in a way that ensures a reliable, resilient and safely decarbonized energy system for individuals and businesses in New York.

The UCG appreciates the opportunity to provide these comments and welcome any questions or further discussion.

Sincerely,

The Brooklyn Union Gas Company d/b/a National Grid NY;
KeySpan Gas East Corporation d/b/a National Grid;
Niagara Mohawk Power Corporation d/b/a National Grid

/s/ Margaret Janzen

Margaret Janzen
Director – Strategy & Regulation
National Grid
175 East Old Country Road
Hicksville, NY 11801
(516) 545-3282

[15] *See, Extending the European Hydrogen Backbone, A European Hydrogen Infrastructure Vision Covering 21 Countries* (Dated April 2021), available at: https://gasforclimate2050.eu/publications/ (Last Accessed April 24, 2021).
[16] CGEP Report at p. 6.

Central Hudson Gas & Electric Corporation

/s/ Anthony Campagiorni, Esq.

Anthony Campagiorni, Esq.
Vice-President, Customer Services and Gas Operations
Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, New York 12601
(845) 486-5201
(914) 589-6146

Consolidated Edison Company of New York, Inc.

/s/ Christopher Raup

Christopher Raup
Director, State Regulatory Affairs
Consolidated Edison Company of New York, Inc.
4 Irving Place
New York, NY 10009
(212) 460-3651

Municipal Electric Utilities Association of New York State

/s/ Christopher Wentlent

Christopher Wentlent
Consultant, MEUA
Municipal Electric Utilities Association of New York State
6652 Hammersmith Drive
East Syracuse, NY 13057
(315) 453-7851

National Fuel Gas Distribution Corporation

/s/ Joseph Del Vecchio

Joseph Del Vecchio
Vice President & Chief Regulatory Counsel
National Fuel Gas Distribution Corporation
6363 Main Street
Williamsville, NY 14221-5887
(716) 857-7237

New York State Electric & Gas Corporation and
Rochester Gas & Electric Corporation

/s/ Joseph Syta

Joseph Syta
Vice President, Controller & Treasurer
New York State Electric & Gas Corporation
and
Rochester Gas & Electric Corporation
755 Brooks Ave
Rochester, NY 14619
(585) 342-0802

Orange and Rockland Utilities, Inc.

/s/ Orville Cocking

Orville Cocking
Vice President – Operations
Orange & Rockland
390 West Route 59
Spring Valley, NY 10977