## VIA ELECTRONIC MAIL

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John Howard, Acting CEO and Chair, New York State Public Service Commission Chair, Power Generation Advisory Panel And Member of The Climate Action Council

## **RE:** Comments of the Utility Consultation Group on the Power Generation Advisory Panel's Recommendations to Substantially Reduce Greenhouse Gas Emissions from the Power Generation Sector

Dear Chair Howard,

On behalf of the Utility Consultation Group (the "UCG")<sup>1</sup>, please accept the following comments for consideration as the Power Generation Advisory Panel (the "Panel") continues to prepare its policy recommendations for the Climate Action Council (the "Council"). These comments consider the recommendations for "proposed policy strategies under consideration" presented at public forums on February 12, 2021, February 22, 2021, March 10, 2021, and April 7, 2021.<sup>2</sup> Consistent with the UCG's stated and continued support of New York's clean energy and climate goals and the Climate Leadership and Community Protection Act (the "Climate Act"), these comments build on the UCG's prior commitment to be leaders in working toward a cleaner energy system with reduced greenhouse gas ("GHG") emissions.

The UCG emphasizes the following key points on the draft recommendations. Additional detail is available below.

- Achieving Climate Act targets requires an 'all-hands-on-deck' approach, and the State should facilitate ways utilities can contribute, both directly and indirectly, to achievement of the Climate Act's targets.
- At this early stage in the implementation of the Climate Act, there are high levels of uncertainty about the best paths to decarbonization, and therefore the State should keep all technology options on the table, rather than reducing future flexibility.
- Pursuing electrification of the transportation, building and industrial sectors, along with low-carbon fuels, will require immediate and long-term upgrades to the transmission and distribution systems to ensure reliability, resiliency, and public safety.

<sup>&</sup>lt;sup>1</sup> 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. ("Con Edison"); KeySpan Gas East Corporation d/b/a National Grid; Municipal Electric Utilities Association of New York State; National Fuel Gas Distribution Corporation ("National Fuel"); New York State Electric & Gas Corporation; Niagara Mohawk Power Corporation d/b/a National Grid; Orange and Rockland Utilities, Inc. ("O&R"); and Rochester Gas & Electric Corporation.

<sup>&</sup>lt;sup>2</sup> Presentations disclosing the draft recommendations can generally be accessed at the following link, under the Power Generation Advisory Panel heading: <u>https://climate.ny.gov/Advisory-Panel/Meetings-and-Materials</u> (accessed on April 9, 2021)

• A decarbonized energy system still needs to be reliable and resilient, and the state should support actions by utilities and others that ensure a robust grid, and, until additional studies are performed, should avoid actions that could reduce reliability.

### I. Introduction

The UCG members see the Panel's work as critical to New York State customers, who have expectations that their power be clean, reliable, and cost-effective. As the energy delivery providers for our customers, we understand their preferences, and are investing in our systems to maintain reliability and affordability while transitioning to clean power. Because there is no perfect carbon-free energy source, meeting the Climate Act's targets requires substantial, multi-faceted investments and flexibility.

New York State will likely use energy efficiency, electrification, battery storage, transmission and distribution expansion, low-carbon fuels and aggressive deployment of renewable electric generation to reduce its greenhouse gas emissions. To date, utility energy efficiency and electrification programs have avoided over 32 million tons of GHG emissions.<sup>3</sup> Utilities have also proposed storage and transmission projects, including Clean Energy Hubs for the interconnection of off-shore wind that can optimize the cost and increase the certainty of creating the renewables the Climate Act requires. Bold yet coordinated action is needed to achieve the transformational goals of the Climate Act, and the UCG members stand ready to take those bold actions and make the needed investments. Other tools for meeting the Climate Act's ambitious and necessary GHG targets include some low and no-carbon fuels, which can help decarbonize hard-to-electrify building typologies and commercial/industrial fuel uses, and which in the future may provide a valuable form of long duration energy storage during extended periods of low wind and solar electric generation.<sup>4</sup>

While the State and our customers want clean energy, other attributes will continue to be important: cost-effectiveness, reliability, resiliency and safety. Minimizing costs while maintaining reliability will be a major challenge with decarbonizing electricity generation that is currently 40% fossil fuel on average and the installed generation capacity is approximately 70% to meet load during peak periods.<sup>5</sup> Investing in all options is necessary because today's generation technologies and electricity transmission cannot meet the Climate Act's 2040 goals. As we transform our energy supply, prioritizing low-cost solutions, investing in research and

<sup>&</sup>lt;sup>3</sup> CO2e gross lifetime savings as recorded by the Clean Energy Dashboard, for all utility administered clean energy programs. <u>https://www.nyserda.ny.gov/Researchers-and-Policymakers/Clean-Energy-Dashboard/View-the-Dashboard</u>, accessed on April 9, 2021.

<sup>&</sup>lt;sup>4</sup> See e.g. Energy + Environmental Economics, New York State Decarbonization Pathways Analysis, Summary of Draft Findings (Dated June 24, 2020), available at: <u>https://climate.ny.gov/Meetings-and-Materials</u> (Last Accessed Feb. 15, 2021) (the "E3 Report Presentation"); Energy + Environmental Economics, Pathways to Deep Decarbonization in New York State (Dated June 24, 2020), available at: <u>https://climate.ny.gov/Climate-Resources</u> (Last Accessed Feb. 15, 2020) (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: <u>https://www.nyiso.com/documents/20142/13245925/Brattle%20New%20York%20Electric%20Grid%20Evolution</u> %20Study%20-%20June%202020.pdf/69397029-ffed-6fa9-cff8-c49240eb6f9d (Last Accessed Feb. 15, 2021) (the "Brattle Report").

<sup>&</sup>lt;sup>5</sup> NYISO's 2020 Power Trends Report, pp. 28-29. https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf/dd91ce25-11fe-a14f-52c8-f1a9bd9085c2

development ("R&D"), and allowing for market developments will minimize the new costs customers face. We must apply the lessons learned in bringing wind and solar to technical and economic scale to other emerging technologies that will play a key role in meeting our Climate Act requirements.

# II. A Decarbonized Energy System Still Needs To Support The Reliable And Resilient Delivery Of Energy

Decarbonization of the state's energy system will not diminish the importance to customers and society of reliable and resilient energy delivery, and the UCG strongly supports the Panel finding that reliability cannot be compromised. To the extent the state relies on electrification as a key strategy to achieve decarbonization in the buildings and transportation system, the reliability and resilience of electric transmission and distribution will become even more critical, as any failure of electric delivery will now impact customers even more deeply. Energy storage is a key technology to support the reliability and resilience on a grid with increasing amounts of intermittent renewables. The UCG supports further modeling and studies of energy storage and looks forward to working with NYISO on market enhancements to both attract additional energy storage investments as well as minimizing costs to customers. Utilization of existing infrastructure to meet energy storage needs, such as power-to-gas technologies, should be explored to maintain reliability and resilience.

Utilities have worked with the State to ensure a renewably powered grid maintains reliability, including by collaborating on the NYISO's Grid in Transition Study. Generally, evaluation of reliability issues must be conducted by reputable analytical experts from the NYISO, the New York State Reliability Council ("NYSRC"), and the NY utilities. The Panel suggestion of an iterative planning process to be pursued by the New York State Energy Planning Board is an excellent approach, particularly since the NYISO has a statutory role on that board.

Without such foundational studies of the impact of various generation addition/retirement scenarios by reputable institutions like the NYISO and NYSRC, the UCG cannot support the suggested institution of a moratorium on new and repowered fossil-fueled facilities operation. This moratorium goes beyond the Climate Act mandates and takes potential pathway options off the table. Not all solutions are yet known, as acknowledged by the Panel. Technologies such as RNG, hydrogen, and carbon capture and sequestration, in many forms, should be researched and developed further. NYSERDA's comprehensive Integration Analysis of the draft recommendations being developed by the Climate Act Advisory Panels has just been initiated, and there is currently a lack of information regarding potential cost-effective pathways. It would not be judicious to bar certain pathways prior to additional analysis, particularly from a cost-effectiveness perspective. The cost impact of the energy transition on New York customers must be considered in light of the negative economic impact of the pandemic.

Additional studies and research are required to determine if non-fossil fuel facilities will be able to compensate for the intermittency of wind and solar, coupled with the fixed duration operation of battery technology. The UCG notes the existence of already-completed pathway studies, such as the NYISO's recent Brattle study that pointed to multiple possible pathways and their reliability gaps. The challenge of the transition is not just logistical or financial, it is technical. Variable generation supply can be mostly managed, but some dispatchable generation is necessary. Besides providing energy megawatts, the energy system requires voltage, frequency, and stability support simultaneously and must balance energy demand and energy supply on a six-second basis, while managing system contingencies. Transitioning from dispatchable generators to intermittent renewables without considering the impact on reliability is inconsistent with the Panel's focus on reliability. One way to ensure the new system can replace the old is setting target dates when dispatchable renewable generation and long-duration storage will be available. That will ensure focus and attention on this foundational new grid technology. As recent events in Texas have demonstrated, regardless of the composition of the supply portfolio, reliability of the electric grid is and will continue to be of paramount importance to customers.

## III. The UCG Supports Accelerating Actions That Increase Renewable Energy Supply And Reduce Methane Leakage

The CLCPA carbon reduction goals are simultaneously transformative and daunting. Looking solely at the level of renewable electric generation consumed in the state, and the history of the growth of renewable generation makes this clear. In the 15-year period between 2003, when the State's renewable portfolio standard was established, and 2019, renewable generation in the state increased from approximately 19 percent of the total generation to approximately 29 percent. In this decade, in order to achieve the 2030 Climate Act target of 70 percent renewable electricity, the State will need to install four times as much renewable generation as was built in the previous 15 years. This is an 'all-hands-on-deck' moment for the State, and we should allow all who can contribute to do so. The UCG believes this should include allowing utilities to own renewable generation, under New York Public Service Commission regulation. The State's largest combination utilities are all associated with affiliates that have substantial experience with renewable generation and associated grid operations. Con Edison's Clean Energy Businesses affiliate is the second largest operator of solar generation facilities in North America. National Grid's renewable energy arm, National Grid Renewables, owns and operates a portfolio of multiple solar and on-shore wind projects throughout the U.S., including 80 MWhrs of energy storage on Long Island. This 'regulated renewables' model will leverage utility experience and financial strength, increase the likelihood that the state achieves the Climate Act's renewable generation targets, and result in lower costs to customers. Considering the enormous amount of renewable generation that needs to be procured between now and 2040, encouraging such 'regulated renewables' will not result in any diminution of opportunity for third-party non-PSC-regulated private developers, who will continue to be able to participate in NYSERDA-led solicitations for renewable energy. Another important action is removing barriers to the ownership of renewable generation by affiliates of the utilities, while retaining appropriate safeguards to protect against market-power concerns, thereby allowing companies based right here in New York to do as much as they can to deliver the clean energy transition.

The UCG strongly supports proactive planning at the bulk transmission, local transmission, and distribution levels to identify infrastructure needs to interconnect and deliver the renewable energy needed to achieve the Climate Act targets. The New York Power Grid Study represents a solid first step in this regard, leveraging the results of the NY utilities' study of local transmission

and distribution needs alongside two bulk transmission studies completed by consultants to DPS Staff and NYSERDA - one focused on Offshore Wind ("OSW") Integration, the other on achieving Zero Emissions by 2040. The UCG encourages the use of the Power Grid findings to build and upgrade transmission that will move renewable power throughout the state and help mitigate congestion and curtailment.

As a next step, the Commission can expedite approvals for the "Phase 2" projects needed to meet the 70x30 Climate Act targets identified by some of the UCG members in their studies. The two bulk transmission studies completed by consultants to DPS Staff and NYSERDA explicitly rely on the timely completion of the electric utilities' local projects in order to fully realize the value of new bulk transmission investments and renewable generation. In addition, neither study considered the physical feasibility of the proposed points of interconnection or specific transmission upgrades. The local transmission projects identified by the electric utilities, including creation of interconnection points, address the transmission system constraints while also considering physical feasibility issues that must be solved to unlock necessary renewable development. Authorizing the needed transmission projects now will increase certainty and decrease costs for renewable project bids, reducing customers' costs and making achieving Climate Act renewable goals more likely.

The UCG supports NYSERDA's continued procurement of resources to meet the mandates of the Climate Act across its various REC programs. These procurements likewise need to be coordinated with the relevant transmission planning and market processes. For example, as NYSERDA solicits for the new category of bundled REC + Transmission contracts (Tier 4), the UCG encourages the state to continue efforts to address necessary enablers such as transmission system upgrades, NYISO market rule modifications and potential NYISO software changes in order to operate this new element of internal controllable direct-current ties.

In addition, UCG members have long supported a coordinated approach to transmission to integrate OSW in order to meet the state's 9,000 MW OSW goal feasibly and cost-effectively. The PSC's recent establishment of a Public Policy Requirement ("PPR")<sup>6</sup> for at least one additional bulk transmission facility between NYISO's Zone K to Zones I and J to ensure the delivery of offshore wind resources is an important step in this regard, but additional coordination is required to facilitate adoption of more than half of that goal. For OSW projects connecting downstate, the most efficient interconnection strategy is to leverage the 345 kV system's limited downstate connection points, directing larger interconnections to the higher voltage interconnection points and smaller sized clean energy technologies to lower voltage interconnections. Future NYSERDA OSW solicitations (and potentially Tier 4, which faces similar issues) should direct developers to points of interconnection on the 345 kV system, which are better suited to integrate large scale interconnections in the load center. With limited points of interconnection on the 345 kV system today, additional points must be created to advance clean energy supplies.

<sup>&</sup>lt;sup>6</sup> Case Number 20-E-0497, In the Matter of New York Independent System Operator, Inc.'s Proposed Public Policy Transmission Needs for Consideration for 2020, *Order Addressing Public Policy Requirements for Transmission Planning Purposes* (dated March 19, 2021).

The Panel has also correctly identified the importance of continuing to reduce methane leakage. UCG members have robust efforts underway to reduce methane leakage from gas distribution systems, which include financial support for making the investments needed to replace leak-prone pipe ("LPP"). The U.S. Environmental Protection Agency recently released its Inventory of U.S. Greenhouse Gas Emissions and Sinks, which shows that at a national level annual emissions from the natural gas distribution system declined 69 percent from 1990 to 2019,<sup>7</sup> and UCG members through their modernization programs have already significantly reduced emissions on their systems.

- National Fuel has reduced emissions by more than 60% from 1990 levels, and at the current pace of its modernization program should reach 90% by 2050.
- National Grid is assessing advanced leak detection technologies for prioritizing the repair of non-hazard leaks, while continuing to reduce emissions through replacement of 220 miles of LPP per year in New York.
- Con Edison replaces 90 miles of LPP per year and is on track to eliminate all its LPP by 2038. As of 2020, Con Edison has reduced fugitive emissions an estimated 48% from a 2005 baseline; assuming the projected pipe replacement schedule, emissions in 2038 will be reduced by approximately 90% from a 2005 baseline. Con Edison surveys its entire gas distribution system monthly to detect leaks as they emerge and is deploying very sensitive natural gas detectors that alert Con Edison to any leaks that emerge in the basements of customer premises.
- O&R replaces 22 miles of LPP per year and is on track to eliminate all its LPP by 2029. O&R eliminated the last remaining sections of cast iron (a form of LPP) in 2018. O&R surveys one-third of its distribution system each year and its bulk system annually and is proposing to deploy natural gas detectors in business districts that will help reduce emissions from inside leaks and detect some outside leaks.

The state should continue to support these emissions reduction programs. Recently revised DEC carbon accounting treatment for methane makes these investments even more cost-beneficial in terms of  $CO2_e$  reduced per dollar invested. The State could further accelerate  $CO2_e$  reductions in this area by authorizing and providing earnings incentives for gas and steam utilities to reduce emissions from their operations and procure low-carbon fuels during the transition (supplies may initially include responsibly-sourced gas and renewable natural gas ("RNG"), with increasing emphasis on the lowest carbon options).

## IV. Cost-Effectiveness For Customers Is Critical To Retaining Support For Clean Energy, And The State Should Support Efforts To Mitigate Cost Impacts And Maximize Economic Benefits Of The Clean Energy Transition

The goal of Climate Act market solutions should be to create environmentally just and equitable climate solutions at the lowest possible cost. The utilities are supportive of providing competitive market opportunities for resources to provide reliable and resilient energy, as well as to send market signals to encourage development of low- and zero-carbon resources. The NYISO has identified a number of enhancements that could be made to the wholesale electricity markets that would facilitate third-party investments to achieve clean energy goals, which could bring clean

<sup>&</sup>lt;sup>7</sup> American Gas Association, *Natural Gas Distribution Emissions Continue to Fall*, released April 14, 2021. https://www.aga.org/news/news-releases/natural-gas-distribution-emissions-continue-to-fall/

energy to the State without requiring financial commitments by State entities like NYSERDA. The State should send a clear signal supporting these NYISO efforts.

While cost-effectiveness for customers is important, economic growth from clean energy will solidify public support for the clean energy transition. New York State's utilities provide workforce training that allows professional development and promotion. Consequently, the utilities are enthusiastic about increasing training and workforce opportunities for new clean energy workers. The UCG welcomes the opportunity to further partner with the state and academic institutions, and the UCG agrees that renewable generators should prioritize hiring locally just as UCG members do.

UCG members have experienced success with several local efforts on workforce development. One example of New York State utility work in this space is National Grid's partnership with SUNY Stony Brook and SUNY University of Buffalo to create an online energy certificate; there have been over 34,000 enrollments since its launch in September 2018.<sup>8</sup>

The UCG members look forward to helping to synthesize this workforce development across the entire state, explore working with the State University of New York Community College System and consider statewide curriculum course offerings at the senior high school level as part of the already established BOCES program. Finally, labor unions such as the AFL-CIO Building Trades or Utility Labor Council can be partners in training this new workforce.

The UCG recognizes the financial challenges currently being faced by some of our customers and that, for some, paying bills can be a struggle. Continuing energy efficiency programs and offering incentives and financing for electrification can help customers. In addition to softening the costs of decarbonization for vulnerable customers, the utilities support minimizing overall transformation costs.

Finally, the UCG believes that distributed energy resources ("DER"s) can reduce costs for all, if sited in areas that reduce the need for traditional infrastructure (for example, as part of a 'non-wires' planning solution) and therefore support efforts to increase DER hosting capacity, and UCG members are already taking steps to do so. For example, in Con Edison's networked underground grid, network protectors that prevent backflow from the secondary grid to the primary grid could mistake returning solar power as a dangerous electric fault. Con Edison's modernization of network protectors allows for more solar and distributed generation connections.

Cost sharing of interconnections for DERs is worthy of consideration, if it was done similarly to the 'make ready' program on electric vehicles, allowing utilities to invest in the infrastructure that would reduce interconnection costs for distributed renewables. Stakeholders would need to consider cost impacts of this type of incentive program and ways to encourage renewable distributed generation developers to connect in areas where the infrastructure is already capable of supporting the resource.

<sup>&</sup>lt;sup>8</sup> This course can be found at the following link: https://www.coursera.org/specializations/energyindustry/?utm\_medium=institutions&utm\_source=suny&utm\_campaign=UBTCIEprenergy#instructors

## V. In Times Of Significant Technological Change, The State Should Support Keeping Options On The Table While Taking Steps That Reduce The Risk Of Not Achieving Climate Act Goals

The UCG members strongly agree with a need for increased R&D that will support the deployment of emission-free technology at scale by 2040. NYSERDA has a valuable role to play, as a hub for coordination of R&D efforts at the state level, while UCG members stand ready to contribute as well, with robust R&D programs at individual utilities which can also support advancing new technologies that will help achieve Climate Act goals. UCG members also maintain ongoing partnerships with academic and research institutions and industry research consortiums, which can also serve as a resource.

Utility partnerships of note include:

- Con Edison, Fortis (Central Hudson's ultimate parent company), National Fuel and National Grid have joined the Low-Carbon Resources Initiative, a project focused on advancing and deploying large-scale energy technology like hydrogen and RNG led by the Electric Power Research Institute and the Gas Technology Institute.
- National Grid is partnering with NYSERDA and Stony Brook University on a hydrogen blending demonstration project that will produce zero- or negative-carbon hydrogen.
- National Grid is taking part in a Department of Energy program called HyBlend, to research blending hydrogen into gas distribution systems.
- National Grid is partnering with Standard Hydrogen Corp on a demonstration project of a green hydrogen storage and delivery system that would incorporate carbon capture, utilization and sequestration.

While the state has focused on battery energy storage systems, the UCG also believes that the state should support R&D projects for emerging long duration storage techniques such as RNG and hydrogen. Additional research should focus on the economics of long duration and seasonal storage, barriers to siting, and identifying technology gaps.

The Panel identifies several process steps necessary to reach the Climate Act's 100x40 goals. The utilities agree that detailed, holistic modeling within a zero-emissions world is needed to identify needed technologies. Any modeling must prioritize the impacts on cost and reliability. It should also clearly describe the driving assumptions and event sequencing. Energy and behavioral models are exposed to a complex risk of embedding out-of-date assumptions that cause bad policy and results. For example, if an energy model assumes that the costs of achieving energy efficiency are too high, it may overweight the need for additional generation, or vice versa.

UCG members would like to join NYSERDA in its innovation efforts and be included in the consortium of stakeholders to develop these solutions. UCG members are very supportive of utility-scale demonstration projects of new technologies, including storage, transmission and distribution, as well as RNG, hydrogen, carbon capture / utilization / storage ("CCUS"). Utilities building some of these projects allows many benefits for customers, including a track record of building complex projects, supplier diversity, and customer ownership of assets past the length of most commercial contracts. Achieving  $CO2_e$  reductions as ambitious as those envisioned in the Climate Act can be supported by employing low- and no-carbon fuels to reduce GHG in targeted circumstances, a conclusion that is supported by ample literature. Failing to begin testing and ramping up development of these resources now could ultimately affect the reliability of consumer energy supplies and impede NYS from achieving its GHG goals.

Specifically, low-carbon fuels can:

- Provide dispatchable generation to support electric reliability as intermittent generation capacity expands and serve as a source of seasonal storage for renewables;
- Reduce emissions from hard to electrify energy uses (e.g., buildings with steam heating distribution, multi-family buildings, heavy and medium-duty transportation, CHP/district thermal systems, commercial cooking and specialized industrial uses);
- Reduce GHG emissions of the natural gas system, including upstream and downstream emissions, both for current end-users of natural gas who will ultimately electrify during the decades-long transition to electric heating systems and appliances and the end-users who will continue to use low-carbon fuels on an enduring basis;
- Directly address emissions from waste and agriculture sectors, rather than shifting those emissions out of state.

Eliminating the option to deploy low-carbon fuels could prevent the State from attaining the emission reduction targets set forth in the Climate Act. As such, the UCG members recommend:

- Setting targets for use of low-carbon fuel resources in the natural gas sector, consistent with the scheduled ramp-up of electrification and Climate Act GHG goals;
- Developing REC-like incentive mechanisms to encourage deployment of low-carbon resources in each of these sectors;
- Funding and authorizing R&D and demonstration projects to advance biofuel and hydrogen technologies;
- Adopting targets to transition other fossil fuels, including fuel oil and propane, to cleaner sources; and
- Allow gas utilities to procure low-carbon fuels in lieu of traditional natural gas.

### VI. Conclusion

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

Sincerely,

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