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Comments on the Climate Action Council's
December 30, 2021 Draft Scoping Plan

Key Recommendations and Insights

Recommendations:

- Given the significant reliability and resiliency concerns raised by the New York Independent System Operator, the New York State Reliability Council and others, the state should not rely on a single form of energy or energy system, particularly one that is prone to disruption by extreme weather events, for its energy needs. The storm-hardened, underground natural gas system should be leveraged to achieve the state's decarbonization efforts, and New York's historic energy transformation should be carefully coordinated to ensure that critical reliability, resiliency and affordability needs are met.
- A thorough quantitative analysis of all costs associated with the various emissions reduction initiatives identified in the Draft Scoping Plan must be performed and shared with the public. This analysis is long overdue and is critical to an understanding of cost impacts on New York's residents and businesses and to the identification of initiatives that will ensure energy affordability, particularly for low-income customers and individuals living in disadvantaged communities.
- Rather than prematurely decommissioning the natural gas system and mandating bans on natural gas and natural gas appliances, the state's focus should be on optimizing and decarbonizing its major energy systems – electric and natural gas - and using them to drive responsible emissions reductions in furtherance of the CLCPA in the most affordable manner possible. This optimization process should be led by the Public Service Commission and should include the coordination of the state's electric and gas systems to facilitate a dual heating path for buildings that will be more affordable for consumers and promote reliability.
- Further research, development and implementation of alternative energy technologies like renewable natural gas, hydrogen and carbon capture and storage should be aggressively pursued. These technologies can be instrumental in reducing emissions in multiple sectors, and will be critical for avoiding significant emissions and economic leakage in the state's industrial sector.
- Given the complexity of New York's energy transformation, and its widespread economic and societal impacts, the design and implementation of any economy-wide strategy must be accomplished in a highly precise fashion and only after significant study and consideration. Economy-wide strategies that place a price or tax on emissions can be particularly challenging, especially considering the recent negative financial impacts of the pandemic on individuals and businesses in the state. Strategies that focus on reducing emissions and/or emissions intensity, like renewable gas and clean heat standards, stimulate the growth of technologies that enable customer choice and facilitate emissions reductions and should be carefully evaluated and pursued.

Insights:

The Energy Transformation Should Not Degrade Energy Reliability, Resiliency and Affordability for New Yorkers

- New York is on the cusp of a highly complex energy transformation driven by the Climate Act's ambitious emissions reduction requirements. It is critical that the final scoping plan ensure the transformation is accomplished in a responsible manner that maintains reliability, resiliency and affordability. While the Draft Scoping Plan acknowledges concerns around reliability and resiliency, it endorses the elimination of critical energy infrastructure - the natural gas system - and fails to fully embrace existing and new technologies like RNG and hydrogen that can address those concerns.
- The NYISO's *2021-2030 Comprehensive Reliability Plan* "finds that the margin to maintain reliability over the next ten years will narrow, or could even be eliminated, if certain efforts to advance the grid are delayed" and that "[e]ven under forecasts for normal weather, future resource adequacy margins are tightening across the New York grid, from Buffalo to Long Island. Extreme weather events, such as heatwaves or storms could eliminate those thin margins, particularly in New York City." The approximately 50,000-mile natural gas system will be available to transport low- and no-carbon energy like RNG and hydrogen, providing a reliable source of dispatchable energy for New Yorkers during those inevitable times when renewable sources do not generate sufficient energy. Further, the Plan acknowledges that "even after full deployment of available clean energy technologies, there is a remaining need for 15 GW to 25 GW of electricity generation in 2040 to meet demand and maintain reliability" and that there should be "a focus on identifying and developing solutions for dispatchable technologies that can be called on as needed to balance supply and demand."
- With respect to health benefits that may result from the recommendations in the Draft Scoping Plan, no consideration has been given to the harmful health effects that could result if a scoping plan is adopted that fails to ensure energy reliability and resiliency.
- Under any of the scenarios presented in the Draft Scoping Plan, the large-scale costs associated with pursuit of the emissions reduction requirements of the Climate Act total in the hundreds of billions of dollars and include an enormous electric transmission and distribution system buildout. The Plan predicts that "even with aggressively managed load, electric consumption doubles and peak load nearly doubles by 2050, and New York becomes a winter peaking system by 2035." This data fails to account for regional differences across the state where some, like the western New York region, will see an approximate *quadrupling* of necessary installed electric capacity to meet the full electrification requirements of the Plan. These anticipated costs can be mitigated if the state relies on the existing natural gas system to facilitate emissions reductions via the pursuit of, among other initiatives, a hybrid dual-energy pathway.
- In addition to cost concerns on the macro level, the Draft Scoping Plan makes no material attempt to quantify *individual* cost impacts. This omission is especially concerning in light of the limited consumer-based information that has been developed by the Council's consultants that suggests significant financial impacts on New Yorkers, generally estimating a cost of between \$20,000 to \$50,000 to convert a natural gas home in upstate New York to all-electric. Based on this data, in National Fuel's western New York service territory alone the estimated cost for consumers to

electrify their homes would be between \$10 and \$25 billion. New York simply cannot pursue a historic overhaul of its energy systems without a clear picture of all the costs consumers will bear, particularly low-income consumers and those living in disadvantaged communities.

The Natural Gas System Should be Leveraged to Ensure a Responsible Energy Transformation

- Despite the existence of studies acknowledging the decarbonization value of the natural gas system, Chapter 18 of the Draft Scoping Plan pre-determines its demise indicating that “it will need to be *downsized substantially* as this transition proceeds” and calling for “strategic *decommissioning of much of the ‘fossil’ [sic] gas distribution system*”. (Emphasis added) When discussing the transition away from gas the Plan states that it “should take place *as quickly as possible* and to the *maximum extent possible* and *include the production, transmission and distribution components of the system.*” (Emphasis added) Nothing in the Climate Act’s call for emissions reductions requires this aggressive and ill-advised dismantling of the natural gas system. Rather than prematurely decommissioning that system, the state’s efforts should be centered on its decarbonization and coordinated optimization with the electric system to responsibly achieve the Climate Act’s emissions reduction targets
- The natural gas system is an ideal decarbonization vehicle given its continually reducing emissions profile and its ability to reliably transport alternative fuels. As a result of efforts by gas utilities to enhance the safety of the distribution system, emissions from that system have fallen dramatically, with further declines expected to come. New York’s utilities modernize more than 500 miles of pipe annually, consistently survey their systems to detect leaks, and have effective programs in place to evaluate, prioritize and repair those leaks. The PSC continually evaluates the utilities’ leak management and leak prone pipe replacement programs, and its most recent *Pipeline Safety Performance Measures Report* notes that the overall backlog of potentially hazardous leaks on utility systems has decreased more than 96% since 2003. A majority of the utilities estimate that all the leak prone pipe on their systems will be replaced in the years leading up to 2030, with the remaining utilities completing that process well prior to the anticipated attainment of the emissions reduction requirements of the CLCPA.

Alternative Fuels Should be Used to Decarbonize the Gas System and Critical Energy Sectors

- A final scoping plan should fully support further research, development and implementation of alternative energy technologies like RNG and hydrogen to reduce emissions in multiple sectors. The Draft Scoping Plan endorses these technologies in a muted way, generally limiting their application only to certain hard-to-electrify sectors. Even the scenario presented in the Plan as including the greatest use of alternative fuels is hampered by these constraints. It limits RNG use almost exclusively to the buildings sector, and in restricted amounts, failing to recognize the significant decarbonization potential of RNG in multiple applications and sectors. This potential was highlighted in a recent report prepared by ICF for NYSERDA, which noted that “RNG is a pipeline-quality gas that is fully interchangeable with conventional natural gas. As RNG is a ‘drop-in’ replacement for natural gas, it can be safely employed in any end use typically fueled by natural gas, including electricity production, heating and cooling, industrial applications, and transportation.” Also, importantly, the Draft Scoping Plan’s rationale for constraining the use of RNG, that its “use is limited by available feedstocks and the need to mitigate statewide emissions from all sectors ... [and] RNG is a low-carbon fuel but it is not zero-emissions” is inaccurate.

- Studies have demonstrated that there will be significant amounts of available RNG in and around New York to facilitate the state’s decarbonization efforts. There are additional amounts of RNG available if one looks outside New York, as the state has when relying on out-of-state renewable generation. A recent report issued by the State University of New York College of Environmental Science and Forestry confirms that RNG has “the potential to make meaningful contributions to New York’s climate and human health targets under the CLCPA.”
- For New York to avail itself of the decarbonization benefits associated with RNG it must first resolve two GHG accounting issues. Specifically, its approach to methane global warming potential which over-inflates the negative consequences of methane leakage, and its use of a gross emissions accounting technique that does not offset RNG combustion with emissions avoided at production. This refusal to acknowledge the carbon neutral and/or negative qualities of RNG puts New York notably out-of-step with other jurisdictions, and failure to adopt low carbon fuel or similar standards inhibits the development of RNG programs in New York to the benefit of other states that have adopted those standards. The final scoping plan should recommend that the Climate Act, regulations and related materials be amended such that New York’s GHG accounting anomalies are resolved and a standard approach can be adopted across state and federal jurisdictions.
- The growth of alternative fuels would increase exponentially in New York if the state were to adopt policies that would encourage development of biofuels in the state such as renewable gas standard and low carbon fuel standard (LCFS) programs. California and Oregon have approved renewable gas standards that allow utilities to procure and transport increasing amounts of RNG on their systems over time, displacing traditional natural gas and decarbonizing those systems. Similarly, LCFS programs have been adopted in California, Oregon, Washington and British Columbia, with several other states considering their own programs.
- Hydrogen is widely believed to have remarkable potential to contribute to responsible emissions reductions in the future, and there are efforts underway in New York, at the federal level and globally to quantify the decarbonization potential of this technology. The state is already developing its hydrogen strategy in concert with the National Renewable Energy Laboratory and the Center for Hydrogen Safety, among other groups, NYSERDA includes as key actions in its *Strategic Outlook 2022 Through 2025* the development of a comprehensive hydrogen roadmap to advance green hydrogen as a deep decarbonization technology, and the Governor announced the state’s intention to collaborate with New Jersey, Connecticut and Massachusetts to secure a portion of the \$8 billion the federal government has earmarked for regional hydrogen hubs. The regional hydrogen hub initiative is one of numerous initiatives in DOE’s extensive Hydrogen Program which is characterized by an all-of-the-above energy strategy that recognizes hydrogen as “a versatile fuel that offers a path to sustainable long-term economic growth” and “can serve as a sustainable fuel for transportation and as input to produce electricity and heat for homes.”
 - Utilities in New York, and several other states and countries, are currently engaged in a thorough review of the use hydrogen as a low- or no-carbon energy source including an evaluation and evolution of their natural gas distribution systems to transport and store hydrogen. In fact, Hawaii Gas currently flows hydrogen and RNG on its system and has been serving its customers with these resources utilizing a pipeline network that safely accommodates a mix of synthetic natural gas, liquid natural gas, RNG and hydrogen.

- In light of the significant decarbonization potential of hydrogen and RNG, the Draft Scoping Plan’s limited application of these technologies to narrow sectors and circumstances should be expanded, particularly at this early stage of the state’s complex energy transformation. The opportunity to fully research and develop these technologies must be maximized, and the state’s extensive natural gas pipeline system should be preserved during this process and viewed as a potentially significant contributor in combination with the electric system to the responsible attainment of the Climate Act’s ambitious emissions reduction targets.

A Hybrid Dual Energy Pathway Should be Adopted for the Buildings Sector

- Chapter 12 of the Draft Scoping Plan relates to New York’s residential and commercial buildings sector and notes that the sector was the largest source of emissions in the state in 2019. The Plan’s approach to decarbonizing this sector, calling for mandated electrification of heat, bans on appliances, prohibitions on natural gas service, etc., is extreme and is likely to result in impairment of energy reliability and resiliency and increased costs for consumers. Not only are these measures dramatically premature given the early stage of the state’s energy transformation, they are unnecessary to fulfilling the goals of the Climate Act and may limit New York’s ability to achieve a responsible energy transformation. A better way to address the challenge presented by the buildings sector – and an approach that will assure greater public acceptance - is to focus first on energy efficiency and then on ways the natural gas and electric systems can be integrated and optimized to ensure reliable, clean energy for homes and businesses.
- A critical path for responsible decarbonization of the buildings sector is adoption of a hybrid dual-energy pathway that utilizes the existing storm-resistant underground natural gas network to deliver alternative fuels. This hybrid pathway can contribute to emissions reductions while minimizing costs and strain on the electric grid. Specifically, this approach would avoid approximately 60 GW of new capacity statewide and approximately \$70 billion of capital expenditures in New York by 2050. In National Fuel’s service area, where a quadrupling of electric capacity would be necessary to achieve the Plan’s full electrification scenario, the benefits of a hybrid approach are even more pronounced.
 - At the individual homeowner level, equipment costs for a hybrid dual energy heating system, comprised of a high-efficiency natural gas furnace and an air source heat pump, are comparable to an all-electric cold climate air source heat pump system, but differences in energy costs would result in significant savings if the hybrid approach is used.
- Utilizing a dual energy pathway can account for regional differences across the state. In National Fuel’s service territory, for example, approximately 65% of homes are single family (compared to 45% in the rest of the state), more than 83% of homes utilize natural gas for heating (compared to 57% in the rest of the state), residents in western New York counties have a lower median income than downstate and temperatures are 56% colder than downstate. The latter distinction is an especially crucial one since hybrid heating systems are more effective in colder climate areas of the state than traditional electric heat pumps and can reduce emissions by more than 92% when combined with energy efficiency measures and decarbonization of upstream emissions.

Mandated Electrification in the Industrial Sector Will Result in Economic and Emissions Leakage

- The need for optimization of the state’s natural gas and electric energy systems to achieve the Climate Act’s emissions reduction goals in a way that is beneficial for the state on all levels is more apparent in the industrial sector than any other. Chapter 14 of the Draft Scoping Plan acknowledges the unique decarbonization challenges faced by this sector.
- For years, manufacturers in New York have relied on natural gas as a primary source of energy for their facilities and operations, in part because of the significant cost advantage that it provides. They have invested heavily in natural gas equipment to carry out their operations, and certain sectors utilize industrial processes and equipment that would be particularly difficult or nearly impossible to convert to electric service. Columbia University’s Center for Global Energy Policy has indicated that electrification is not currently a viable pathway to zero emissions for industrial processes like cement and steel production, the fertilizer industry, and heavy-duty transport.
- National Fuel’s large industrial customers are generally supportive of emissions reductions, and many have already begun to implement various sustainability programs. Most of these customers, however, have expressed serious concerns about the viability of a full-electrification pathway, indicating that it may require a move of their operations out of New York, particularly due to several anticipated barriers including: (a) availability of technology; (b) upfront capital costs of equipment conversion and capital cost financing; (c) electric utility connection costs; and (d) annual equipment operating costs. National Fuel documented its industrial customers’ concerns relative to the Climate Act’s emissions reduction requirements and submitted them to the PSC in the context of its Gas Planning Proceeding (Case 22-G-0131).
- Concerns raised by National Fuel’s industrial customers bear out many of the leakage considerations addressed in Chapter’s 14 and 17 of the Draft Scoping Plan and further emphasize the need for greater focus on the development and use of alternative fuels to help this sector achieve the emissions reduction requirements of the Climate Act. The need for alternative fuels extends well beyond the industrial sector if New York intends to meet these requirements in a way that ensures energy reliability, resiliency and affordability.

Economy-Wide Strategies Must be Carefully Evaluated

- Chapter 17 of the Draft Scoping Plan identifies various economy-wide strategies for public input and, in doing so, acknowledges that there can be value, but also potentially significant dangers, associated with adoption of such a program. The design and implementation of an economy-wide strategy of the sort addressed in Chapter 17 must be accomplished in a highly precise fashion after significant study and consideration. No strategy should be adopted that would result in a rapid transition away from the use of natural gas and the natural gas system. Understanding that natural gas use will diminish over time, any reduction in that use must be carefully coordinated with the development of alternative energies such as RNG and hydrogen and aligned and synchronized with the timing and accomplishment of the necessary build-out of the electric system to assure it can reliably handle additional load.
- The dangers associated with an improvidently designed strategy can be especially prevalent with respect to carbon pricing, which could dramatically increase bills for energy consumers and result in emissions and economic leakage with potentially little corresponding emissions reduction benefit.

Strategies that may be more beneficial than those focusing on pricing emissions are those that encourage and incentivize consumers and utilities to focus on reducing emissions intensity or emissions themselves. Examples of these strategies include the renewable gas standards approved in California and Oregon, and a clean heat standard like the one proposed in Vermont that would require natural gas utilities and other fuel suppliers to reduce their GHG emissions through the use of tradeable clean heat credits earned or obtained through eligible clean heat measures such as weatherization programs, the development of thermal heating programs, the installation of heat pumps and the pursuit of alternative fuels.