January 17, 2023

VIA ELECTRONIC FILING

Hon. Michelle L. Phillips, Secretary
New York State Public Service Commission
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Email: Secretary@dps.ny.gov

RE: Case 20-E-0380 & 20-G-0381: CLCPA Study – Comments of the Sierra Club

The Sierra Club respectfully submits these comments in response to National Grid's (the Company's) draft Climate Leadership and Community Protection Act (CLCPA) Study to register its continuing objections to and concerns regarding the Company's Study. Sierra Club submitted comments on July 20, 2022, August 19, 2022, and December 7, 2022 raising fundamental issues with the design and assumptions underpinning the CLCPA Study. These serious flaws remain largely unaddressed, and are rendered more glaring by the Climate Action Council's final Scoping Plan, which charts a very different course for New York's buildings than what is envisioned in the Company's "Clean Energy Vision." The Sierra Club continues to believe that National Grid's Study is inconsistent with its obligations under the Joint Proposal in 20-E-0380 & 20-G-0381 and cannot serve as a basis for pursuing the pipeline-based elements of its Clean Energy Vision in future rate cases.

I. Procedural Background

In its September 2021 Joint Proposal in the Niagara Mohawk rate case, National Grid agreed to undertake a study "that evaluates how the Company's business may evolve in the future to support the emission reduction and renewable energy goals of the CLCPA and any emission reduction goals the Company has independently adopted."[1] The Company agreed that the Study would "provide an analysis of the scale, timing, costs, risks, and uncertainties (translated into sensitivities around key cost and availability assumptions), and customer bill impacts of a range of strategies for achieving significant, quantifiable reductions in carbon emissions from the use of gas delivered by the Company in its service territory."[2] National Grid further agreed that it "will incorporate and respond to any findings or guidance of the New York State Climate Action Council" in the Study.[3] Under the terms of the Joint Proposal, the Company can defer up to $500,000 of its New York gas utility customers' money for this study.[4]

[1] Joint Proposal, 20-G-0381 (Sept. 27, 2021), at 115.
[2] *Id.*
[3] *Id.*
[4] *Id.*

Prior to commencing the CLCPA Study, on April 19, 2022, National Grid released a "Clean Energy Vision" for New York and Massachusetts,[5] promoting it with a full page ad in the Boston Globe and on its website. The Clean Energy Vision centers around a significant increase in lower-carbon fuels (renewable natural gas (RNG) and hydrogen) and hybrid heating systems.

Two and a half months later, on July 1, 2022, National Grid filed a Notice in the Niagara Mohawk docket announcing an initial stakeholder meeting for the CLCPA Study.[6] At the meeting, National Grid disclosed that its Study would analyze three scenarios: two scenarios from the Climate Action Council's Integration Analysis and the Company's previously-announced Clean Energy Vision.[7] In response, multiple parties registered concerns about the appropriateness of National Grid's reliance on its Clean Energy Vision in the CLCPA Study, both because the Company had already committed significant resources to promoting its Vision and, additionally, because the Vision was not compliant with New York's climate accounting.[8] Stakeholders reiterated these concerns following National Grid's second stakeholder meeting on August 3, 2022[9] and in subsequent comments.[10] To date, the Company has not addressed these concerns and has continued to build its CLCPA Study around its Clean Energy Vision.

During the Study development process, stakeholders also raised significant concerns about the appropriateness of key assumptions in the Company's Vision including: the quantities of RNG that the Company claimed to be available to it; the safety and feasibility of blending hydrogen at concentrations of 20 percent by volume in the existing distribution system; the appropriateness of assuming whole-sale leak-prone pipe replacement programs continue into the mid-2030's in certain service territories even in scenarios where 90 percent of the Company's current gas distribution system is decommissioned in less than 30 years; and the impact of the

[5] National Grid, Our clean energy vision: A fossil-free future for cleanly heating homes and businesses (Apr. 2022), available at https://www.nationalgrid.com/document/146251/download.
[6] National Grid, Notice of First Stakeholder Meeting for CLCPA Study, 20-G-0381 (July 1, 2022).
[7] Guidehouse, CLCPA Study for NMPC: Stakeholder Meeting – Draft Scoping Plan, at Slide 15, filed on July 8, 2022 in 20-G-0381.
[8] Comments of Natural Resources Defense Council, Cases 20-E-0380 & 20-G-0381 (July 21, 2022) (National Grid compromised the integrity of the CLCPA Study by preemptively promoting its Clean Energy Vision); Initial Comments and Questions of the Sierra Club, Cases 20-E-0381 & 20-G-0381 (July 20, 2022) ("The inclusion of a scenario that the Company has already invested heavily in promoting calls into question the objectivity of the CLCPA Study . . . ."); Comments of Bob Wyman, Cases 19-E-0309, 19-G-0310, 20-E-0380, 20-G-0381 (July 20, 2022) (raising concerns about reliance on the Clean Energy Vision given the intervening passage of the Utility Thermal Energy Network and Jobs Act); Comment on National Grid's CLCPA Study Draft Scoping Plan Materials by Sane Energy Project, Cases 20-E-0380, 21-G-0381 (July 21, 2022) (recommending audit of how much money the Company has spent advertising and lobbying for its Clean Energy Vision and whether ratepayer funds have been used).
[9] *See* Comments of Natural Resources Defense Council, Cases 19-E-0309, 19-G-0310, 20-E-0380, 20-G-0381 (Aug. 22, 2022) (urging the Company to eliminate its Clean Energy Vision from the CLCPA Study due to its inconsistency with the Company's commitments in the Joint Proposal approved in 20-E-0380 and 20-G-0381); Comments of the Sierra Club, Cases 20-E-0380 & 20-G-0381 (Aug. 19, 2022) (Clean Energy Vision fails to achieve commensurate emission reductions from the Company's system to the integration analysis scenarios rendering its inclusion inconsistent with the requirements of the Joint Proposal).
[10] *See, e.g.*, Comments of the Sierra Club, Cases 20-E-0380 & 20-G-0381 (Dec. 7, 2022).

Inflation Reduction Act on the relative cost and feasibility of the scenarios analyzed.[11] These concerns have not been addressed.[12]

On December 19, 2022, the Climate Action Council approved a final Scoping Plan for achievement of New York's CLCPA mandates. The final Scoping Plan incorporates detailed recommendations for decarbonization of buildings. The Plan envisions the adoption of one to two million heat pumps by 2030 and anticipates that "the large majority of buildings statewide use electric heat pumps for heating, cooling, and hot water by 2050.[13] It observes that "[e]lectrification of space and water heating with high-efficiency heat pumps is a viable approach to decarbonizing operations for nearly all types of buildings in New York" and that "[m]odern heat pumps that work in very cold weather are commercially available and able to keep homes and businesses safe and comfortable year-round, as long as they are properly chosen, sized, installed by appropriately trained workers, and paired with an energy-efficient building envelope and HVAC system design."[14] While identifying the potential for supplemental heat (e.g., electric resistance or pre-existing gas-fired system) in certain limited Downstate applications (high rise buildings) in the near term, the Plan explains that "it is anticipated that supplemental heat will be phased out as envelopes are improved and heat pump technology advances to meet the needs of existing high-rises."[15] And while the Plan identifies a near-term need for supplemental heat in the coldest counties in New York, it anticipates that this need will be time limited as the next generation of cold climate air-source heat pumps are commercialized.[16] Moreover, the Scoping Plan structures in the phase-out of all gas appliances through its recommended adoption of zero-emissions appliance standards. Specifically, the Plan directs NYSERDA and the Department of Environmental Conservation to develop zero-emission standards for building equipment that prohibit the replacement of fossil-fuel burning equipment at the end of its useful life for specified building types and equipment types beginning in 2030 and 2035.[17]

The final Scoping Plan also identified the significant public health benefits that will come from electrification of the building sector due to lessening the current health risk associated with combustion-based appliances for heating, cooking, and other uses.[18] The final Plan notes that "[l]eaking fossil fuel home heating systems were the primary cause listed among the 15,000 carbon monoxide poisonings resulting in emergency department visits in the United States annually," and that New York alone experiences "approximately 1,500 emergency department visits and 160 hospitalizations for carbon monoxide poisoning annually."[19] It further explains that combusting gas for cooking releases not only carbon monoxide, but also harmful nitrogen

[11] *See* Comments of the Sierra Club, Cases 20-E-0380 & 20-G-0381 (Dec. 7, 2022).
[12] *See* Draft CLCPA Study at 3, n.11 (identifying key changes to the CLCPA Study that were informed by stakeholder feedback).
[13] Climate Action Council, Final Scoping Plan (Dec. 19, 2022), at 176.
[14] *Id.*
[15] *Id.* at 178.
[16] *Id.* at 179.
[17] *Id.* at 189-90 (zero-emission standards would prohibit replacement of residential-sized equipment for combusting fossil fuels for heating, cooling, and hot water in 2030, and for large and commercial-sized equipment in 2035. Additionally zero-emission standards would prohibit replacement of fossil fuel appliances for cooking and clothes drying in 2035 and large fuel burning equipment for heating and domestic hot water beginning in 2035).
[18] *Id.* at 114.
[19] *Id.*

oxides, fine particulate matter, and even carcinogens such as benzene, and that "[h]omes with gas stoves have, on average, 50% to 400% higher concentrations of [nitrogen dioxide] indoors than those without."[20] Moreover, despite their salutary intent, adequately functioning range hoods "remove some but not all of this indoor air pollution,"[21] and children living in homes with gas stoves have an increased risk of developing asthma.[22] The final Plan notes the disproportionate impacts of asthma on Disadvantaged Communities (DACs) as well as the fact that individuals in DACs are more likely to have unvented or piloted gas stoves and that electrifying cooking appliances can reduce the risk of asthma in DACs.[23]

On December 22, 2022, the Company released its draft CLCPA Study, which continues to promote the Company's Clean Energy Vision. In sharp contrast to the final Scoping Plan, National Grid's Clean Energy Vision is built around a pipeline-based future for buildings. Whereas the final Scoping Plan cabins the role for low-carbon fuels to sectors that are challenging to electrify—certain medium- and heavy-duty vehicles, high-temperature industrial, and potentially district heating and non-road transportation[24]—the Company's Vision would utilize these fuels pervasively in buildings. Twenty percent of non-residential buildings would transition to 100 percent hydrogen gas service by 2050.[25] Forty percent of residential and commercial buildings would rely on gas in addition to an air-source heat pump, and the gas furnace would handle the majority of heating needs, operating at temperatures below 30 degrees Fahrenheit.[26] While the Company's draft CLCPA Study incorporated several references to the final Scoping Plan, it selectively noted elements that it characterized as favorable to the Company's Clean Energy Vision while ignoring the thrust of the Plan's recommendations for buildings.

II. Comments

A. The Company's Inclusion of its Clean Energy Vision in the CLCPA Study Remains Inappropriate and Inconsistent with its Obligations under the Joint Proposal; the Clean Energy Vision is Not Compatible with the Climate Action Council's Final Scoping Plan

In each of its prior sets of comments during the CLCPA Study development process, Sierra Club has raised concerns about National Grid's scenario selection based on the inclusion of the Company's Clean Energy Vision.[27] The Company had actively promoting its Vision prior to the initiation of the Study and has continued to promote its vision throughout the development of the Study. In addition, the Clean Energy Vision scenario does not achieve commensurate emission reductions from the building sector, rendering it inappropriate to compare to the

[20] *Id.* at 114, 115.
[21] *Id.* at 114.
[22] *Id.*
[23] *Id.* at 114-15.
[24] *Id.* at 123.
[25] National Grid Draft CLCPA Study at 7, Tbl. ES-4.
[26] *Id.*
[27] Comments and Questions of the Sierra Club, Cases 20-E-0381 & 20-G-0381 (July 20, 2022); Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 1-2; Comments of the Sierra Club, Cases 20-E-0380 & 20-G-0381 (Dec. 7, 2022), at 1-2.

integration analysis scenarios. As Sierra Club noted in its August comments, the Company's commitment in the Joint Proposal was to conduct a study analyzing a range of GHG reduction strategies "*from the use of gas delivered by the Company in its service territory*."[28] Comparing scenarios that trade emissions from the Company's use of delivered gas in its service territory for emissions in other sectors of the economy fundamentally changes the nature of the inquiry from *how* to decarbonize the Company's system, to *whether* to do so. Merely seeking to answer the latter is plainly inconsistent with the Company's obligations under the Joint Proposal.

The Company has not addressed its obvious conflict of interest or the fatal concern that the Study compares scenarios that achieve different levels of emission reductions from the Company's system and trading building sector emission reductions for emission reductions from the agriculture and waste sector.[29] Consequently, Sierra Club once again voices its objection to the inclusion of the Clean Energy Vision and to modeling that relies on shifting emission reductions between sectors rather than isolating how the Company can reduce emissions from the use of gas delivered by the Company in its service territory. This approach invalidates the study design and fails to comply with Company's obligations under the Joint Proposal.

The Company's promotion of its Clean Energy Vision in the CLCPA Study is also inappropriate because the Vision is incompatible with the Climate Action Council's final Scoping Plan. Under the Niagara Mohawk Joint Proposal, National Grid is obligated to "incorporate and respond to any findings or guidance" from the Climate Action Council.[30] The final Scoping Plan provides considerable guidance regarding the State's vision for decarbonizing buildings and also identifies specific measures to be taken to effectuate that vision. The draft Study, which was released shortly after the Climate Action Council finalized and approved the Scoping Plan, fails to grapple with the divergence between the Company's Vision and the Climate Action Council's.

Most fundamentally, the Company's Vision is predicated on use of alternative fuels and hybrid systems to justify retention of the existing gas pipeline system. By contrast, the final Scoping Plan envisions electrification of space and water heating with high-efficiency heat pumps as the pathway for decarbonizing New York's buildings.[31] Alternative fuels are envisioned as, at most, a temporary rather than a permanent feature of the gas transition process: "to meet customer needs for space heating or process use *where electrification is not yet feasible* or to decarbonize the gas system *as it transitions*."[32] The temporary status of alternative fuels is reinforced by the recommendations in the Buildings chapter, which call for the adoption of building codes "that prohibit building systems or equipment used for the combustion of fossil fuels in new construction statewide" for single-family and low-rise multifamily residential buildings in 2025 and in high-rise multifamily and commercial buildings in 2028,[33] and for the phase-out at their end of useful life of fuel-burning appliances beginning in the 2030's.[34]

[28] Joint Proposal, Cases 20-E-0380 & 20-G-0381 (Sept. 27, 2021), at 115 (emphasis added).
[29] National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 22.
[30] Joint Proposal, 20-G-0381 (Sept. 27, 2021), at 115.
[31] *See* Climate Action Council, Final Scoping Plan (Dec. 19, 2022), at 176.
[32] *Id.* at 361.
[33] *Id.* at 187.
[34] *Id.* at 190.

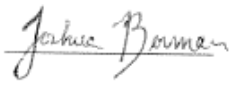
Adoption of the recommendations in the final Scoping Plan will effectively eliminate the need for the Company's pipeline distribution system, and its retention—at enormous cost to its customers—cannot be justified in light of the direction articulated by the final Scoping Plan.

B. National Grid Has Not Address Other Defects with Its Study

Not only is National Grid's Clean Energy Vision incompatible with the final Scoping Plan, but it also suffers from fatal defects that remain unaddressed. These defects—that National Grid's Vision relies on an outsize share of an optimistic assessment the total potential RNG in the Eastern United States; that National Grid assumes billions of dollars in leak-prone pipe investments are unavoidable even where those same pipes would be retired less than a decade after replacement; that National Grid relies on blending high concentrations of hydrogen into its existing pipeline system despite current research indicating that such blends are unsafe; and that National Grid fails to quantify and mischaracterizes the relative impact of the Inflation Reduction Act on analyzed scenarios—were detailed in Sierra Club's December 7, 2022 comments. In its December 22 draft of the Study, the Company declined to make any changes in response to these concerns. Consequently, Sierra Club appends as Attachment 1 its December 7 comments to preserve its ongoing concerns.

Thank you for your consideration.

Respectfully submitted,



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Attachment 1

SIERRA CLUB

December 7, 2022

VIA ELECTRONIC FILING

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RE: Case 20-E-0380 & 20-G-0381: CLCPA Study – Comments of the Sierra Club

The Sierra Club respectfully submits these comments in response to the information provided during the November 28, 2022 meeting regarding National Grid's (the Company's) Climate Leadership and Community Protection Act (CLCPA) Study. As set forth below, National Grid's CLCPA Study continues to suffer from serious defects in its design and assumptions that render it incapable of fulfilling the Company's obligations under the Joint Proposal in these dockets and invalidate its results. In its current form, it cannot serve as a guide for the Company's future CLCPA compliance planning.

1. **National Grid's Study Impermissibly Fails to Compare Scenarios with Commensurate Emission Reductions from its System, Violating the Company's Obligations Under the Joint Proposal and Invalidating the Study Design**

In its August 19, 2022 comments, Sierra Club raised concerns about National Grid's scenario selection based on statements by the Company's consultant, Guidehouse, that the three modeled scenarios do not achieve commensurate emission reductions from the building sector.[35] As Sierra Club noted in its August comments, the Company's commitment in the Joint Proposal was to conduct a study analyzing a range of GHG reduction strategies "*from the use of gas delivered by the Company in its service territory*."[36] Comparing scenarios that trade emissions from the Company's use of delivered gas in its service territory for emissions in other sectors of the economy, Sierra Club flagged, fundamentally changes the nature of the inquiry from *how* to decarbonize the Company's system, to *whether* to do so. Merely seeking to answer the latter is plainly inconsistent with the Company's obligations under the Joint Proposal.

The modeling results shared on November 21, 2022 confirm that the magnitude of emission reductions required from the building sector is substantially different between the scenarios selected. Indeed, while the raw numbers were not provided, bar charts from the Company's consultant show that the Company's Clean Energy Vision scenario results in 2050

[35] Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 1-2.
[36] Joint Proposal, Cases 20-E-0380 & 20-G-0381 (Sept. 27, 2021), at 115 (emphasis added).

building sector emissions that are *3 to 4 times higher* than the two other scenarios analyzed.[37] These significantly greater buildings sector emissions are primarily counterbalanced by increased emission reductions from the agriculture and waste sector in the CAC#2 and #3 scenarios[38] so that the overall economy-wide emissions across the three scenarios remain consistent.

Sierra Club strongly reiterates its concern and objection that modeling that relies on shifting emission reductions between sectors invalidates the study design and fails to comply with Company's obligations under the Joint Proposal. The relative costs of reducing emissions from the buildings sector versus the agriculture and waste sector do not bear on how the Company should reduce emissions from its own system.

2. National Grid's Assumptions Regarding Leak-Prone Pipe Replacement and Capital Expenditures Are Inadequately Supported and Unreasonable

In its August 2022 comments, Sierra Club raised concerns about the study assumptions regarding the avoidability of leak-prone pipe (LPP) replacement costs and other capital expenditures in the gas system.[39] The Sierra Club estimated that the LPP replacement costs across the company's system alone were on the order of $17.5 billion and urged that the study evaluate the degree to which portions of this investment may be avoidable based on whether and how customers exit the gas system across the study scenarios.[40] In response, Guidehouse modified its model to allow some degree of LPP cost avoidance starting in different years (determined by the Company) for each of the three operating company service territories: 2025 for Niagara Mohawk, 2028 for KEDLI, and 2034 for NMPC.[41] It also provided a quantification of LPP length and replacement cost by operating company.[42] These changes, while directionally helpful, are insufficient and inadequately supported.

As an initial matter, the LPP length and cost data confirm the magnitude of the potential LPP cost identified in Sierra Club's August comments. While Guidehouse's presentation declined to complete the calculations, as shown in the table below, in nominal dollars, the LPP replacement costs across the three National Grid operating companies exceed $19.7 billion (2022$).

Operating Co.	**Length of LPP in Service, 2021 (miles)**	**Cost of LPP Replacement (2022$/foot)**	**Total LPP Replacement Cost (nominal 2022$)**
KEDNY	1,437	$1,653	$12,541,906,080
KEDLI	2,782	$450	$6,610,032,000
Niagara Mohawk	404	$274	$584,474,880
Total			$19,736,412,960

[37] National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 22.
[38] *Id.*
[39] Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 2.
[40] *Id.* at 2-3.
[41] National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 9.
[42] *Id.*

Significantly, these LPP replacement costs are not equal across operating companies. Nearly 2/3rd of the costs ($12.5 billion) are from KEDNY. Yet, for KEDNY the modeling assumes none of the costs are avoidable until 2034, well beyond the start year for LPP cost avoidance for the other operating companies (2025 and 2028). National Grid has not demonstrated that it is reasonable or necessary to continue LPP replacement programs in the KEDNY service territory for an additional 11-12 years even in scenarios where 90 percent of the current system is decommissioned in less than 30 years. Indeed, during the stakeholder meeting, Guidehouse acknowledged that some of the LPP being replaced during the next 12 years would be retired before 2050 in the 90 percent decommissioning scenario. With $12.5 billion of potential LPP investments remaining in the KEDNY service territory, the Company's failure to adequately establish the appropriateness of the 2034 date for avoided LPP replacement is highly problematic and must be addressed.

3. National Grid's Assumptions Regarding Hydrogen Blending Are Unreasonable and Must Be Revised or Additional Pipeline and Appliance Costs to Accommodate Elevated Hydrogen Concentrations Must be Included

In its August comments, Sierra Club raised concerns with Guidehouse's assumption that hydrogen can be safely blended into the pipeline distribution system at concentrations of 20 percent by volume.[43] Sierra Club directed Guidehouse to a recent analysis by the California Public Utilities Commission (CPUC) from July 2022 that confirmed that hydrogen causes embrittlement and blistering of cathodically sealed pipes[44] and that even synthetic (MDPE) pipes show deteriorating performance with increased hydrogen blending, finding limitations in material integrity for mixtures of 20 percent hydrogen.[45] The CPUC concluded, based on the analyses conducted, that a "systemwide blending injection scenario becomes concerning as hydrogen blending approaches 5% by volume."[46]

During the November stakeholder session, Guidehouse responded to comments regarding the California PUC study. In doing so, it ignored the study's primary conclusions and recommendations, instead simply asserting that the study calls for additional research. Further, Guidehouse argued that blending hydrogen at high concentrations does not raise concerns because the higher blending concentrations would not be reached until later in the planning time frame.

Guidehouse's response is inadequate. Constructing a decarbonization strategy around the hope that future research will controvert current evidence is poor planning and profoundly unreasonable. If Guidehouse continues to model concentrations of hydrogen above 5 percent by volume in its Clean Energy Vision scenario, it should also build into that scenario additional costs reflecting the need to replace all pipes not presently demonstrated to be capable of accommodating these higher concentrations of hydrogen. In addition, modeling elevated concentrations of hydrogen must incorporate the cost of appliance replacements that would be

[43] Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 3.
[44] CPUC Hydrogen Blending Study at 16-17.
[45] *Id*. at 3.
[46] *Id.* at 4.

required to safety combust these higher blends, as well as the significantly lower energy content of hydrogen gas.

4. National Grid's Assumptions Regarding RNG Availability are Inappropriate and Unrealistic, and Significantly Undercut the Credibility of the Company's Clean Energy Vision

During the November stakeholder session, Guidehouse responded to questions regarding its assumptions regarding the availability of "renewable" natural gas (RNG). Guidehouse confirmed that it assumed RNG import potential to be 7.2% of the American Gas Foundation's "high resource" case for the entire Eastern United States.[47] Guidehouse claims this assumption is reasonable because 7.2% "represents National Grid's share of Eastern US residential & commercial sales in 2020."[48]

Guidehouse's RNG availability assumptions are not defensible. Setting aside whether American Gas Foundation's optimistic "high resource" scenario provides a reasonable forecast of available RNG in the United States, attributing to National Grid 7.2% of all RNG in the Eastern United States is patently unreasonable. In response to questions about National Grid's share of imported RNG, Guidehouse confirmed that residential and commercial gas sales are only a subset of total gas consumption in Eastern states and that, changing the denominator to reflect National Grid's share of *total* gas sales would significantly affect its proportional allocation. Indeed, based on data from the Energy Information Administration for the full United States, residential and commercial gas consumption represents only slightly more than 1/4th (26.1%) of total natural gas consumption.[49] Thus, rather than approximately 160 TBtu of RNG being available to National Grid in 2050,[50] a proportional share of total gas consumption would give the Company approximately 40 TBtu.

Allocating RNG based on total gas consumption is far more reasonable than allocating based on residential and commercial gas consumption. RNG is a limited commodity and the residential and commercial buildings sectors are some of the easiest sectors to electrify—and thus the least likely to need RNG to decarbonize. Indeed, other New York gas utilities have argued that the *industrial* sector presents real challenges to electrification.[51] If limited RNG can be used only to help decarbonize a subset of current gas uses, there is no rational basis for presuming it would be used exclusively (or even disproportionately) to decarbonize residential and commercial buildings, where it is least critical.

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[47] National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 12.
[48] *Id.*
[49] U.S. Energy Info. Admin., Natural Gas Consumption by End Use, https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm. Total gas consumption in 2021 was 30,664,951 million cubic feet. Of this, 4,716,208 million cubic feet were residential consumption and 3,298,222 million cubic feet were commercial consumption.
[50] National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 12.
[51] *See, e.g.*, National Fuel Gas Distribution Corporation Informational Filing, Case Nos. 20-G-0131 & 22-M-0149 (June 15, 2022) (highlighting the practical challenges that long-standing natural gas industrial customers would face if obligated to fully electrify).

Rescaling the amount of RNG available to National Grid has significant implications for its modeling. RNG plays a central role in the Company's Clean Energy Vision, and its Vision would not be viable if the Company could only use 40 TBtu of RNG, rather than its claimed 160 TBtu. According to Guidehouse's November 28 presentation, in the Clean Energy Vision scenario, Niagara Mohawk uses more than 20 TBtu in 2050,[52] KEDNY uses 50 TBtu,[53] and KEDLI uses more than 25 TBtu.[54] This ~95 TBtu of RNG far exceeds the Company's proportional (~40 TBtu) share of total gas consumption in the East, betraying a fatal flaw in the Company's Clean Energy Vision.

5. The Final Study Must Incorporate the Inflation Reduction Act in a Quantitative Rather than Qualitative Manner

In response to feedback about the need to incorporate the myriad incentives in the Inflation Reduction Act (IRA) into the CLCPA study, Guidehouse explained during the November 28 stakeholder meeting that the IRA would be discussed only qualitatively in the final study. Guidehouse also developed a table[55] apparently attempting to imply that the IRA would favor its preferred Clean Energy Vision scenario over the Climate Action Council scenarios.

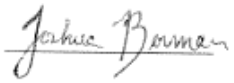
Notably, Guidehouse's table suggests that the most significant impact of the IRA will be on hydrogen production, given incentives for hydrogen in the legislation.[56] However, as discussed above, based on our current understanding of hydrogen's deleterious effects on the pipe system, it can only be safely blended into the system in very limited quantities (5 percent by volume, or less than 2 percent by energy content). Consequently, whatever impact the IRA has on hydrogen production, it will have de minimis impact on National Grid's Clean Energy Vision scenario. Much more relevant to the Clean Energy Vision scenario are incentives for biogas production, since the Clean Energy Vision relies so heavily on RNG. However, as Guidehouse acknowledges, RNG incentives under the IRA sunset in 2025 and the Clean Energy Vision assumes most development of RNG happens after these incentives sunset.[57] Consequently, there is little if anything Guidehouse can point to in the IRA that will benefit the Company's Clean Energy Vision.

By contrast, the IRA has significant incentives for electrification of heating and hot water equipment as well as energy efficiency and electrification incentives that will benefit the Climate Action Council scenarios, which rely more heavily on these technologies.[58] Incorporating these IRA incentives fully and in a quantitative manner in the study is critical especially for developing an accurate forecast of end user investments. The IRA effects a major cost shift from New Yorker utility customers to federal taxpayers that will affect the cost for New York of pursuing a more heavily electrified future. The current qualitative discussion of the IRA is misleading and inadequate.

[52] *Id.* at Slide 32.
[53] *Id.* at Slide 39.
[54] *Id.* at Slide 41.
[55] *Id.* at Slide 15.
[56] *See id.*
[57] *Id.*
[58] *See id.*

Thank you for your consideration.

Respectfully submitted,



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