



December 7, 2022

VIA ELECTRONIC FILING

Hon. Michelle L. Phillips, Secretary
New York State Public Service Commission
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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.¹ 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.*”² 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

¹ Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 1-2.

² 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.³ 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 scenarios⁴ 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.⁵ 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.⁶ 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.⁷ It also provided a quantification of LPP length and replacement cost by operating company.⁸ 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

³ National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 22.

⁴ *Id.*

⁵ Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 2.

⁶ *Id.* at 2-3.

⁷ National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 9.

⁸ *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.⁹ 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 pipes¹⁰ and that even synthetic (MDPE) pipes show deteriorating performance with increased hydrogen blending, finding limitations in material integrity for mixtures of 20 percent hydrogen.¹¹ The CPUC concluded, based on the analyses conducted, that a "systemwide blending injection scenario becomes concerning as hydrogen blending approaches 5% by volume."¹²

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

⁹ Comments of the Sierra Club, Dkt. Nos. 20-E-0380 & 20-G-0381 (Aug. 19, 2021), at 3.

¹⁰ CPUC Hydrogen Blending Study at 16-17.

¹¹ *Id.* at 3.

¹² *Id.* at 4.

required to safely 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.¹³ Guidehouse claims this assumption is reasonable because 7.2% “represents National Grid’s share of Eastern US residential & commercial sales in 2020.”¹⁴

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.¹⁵ Thus, rather than approximately 160 TBtu of RNG being available to National Grid in 2050,¹⁶ 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.¹⁷ 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.

¹³ National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 12.

¹⁴ *Id.*

¹⁵ U.S. Energy Info. Admin., Natural Gas Consumption by End Use, https://www.eia.gov/dnav/ng/ng_cons_sum_dcunus_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.

¹⁶ National Grid, Upstate and Downstate CLCPA Studies: Stakeholder Meeting – Draft Study Outputs (Nov. 28, 2022), at Slide 12.

¹⁷ *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 2050,¹⁸ KEDNY uses 50 TBtu,¹⁹ and KEDLI uses more than 25 TBtu.²⁰ 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 table²¹ 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.²² 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.²³ 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.²⁴ 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.

¹⁸ *Id.* at Slide 32.

¹⁹ *Id.* at Slide 39.

²⁰ *Id.* at Slide 41.

²¹ *Id.* at Slide 15.

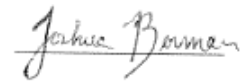
²² *See id.*

²³ *Id.*

²⁴ *See id.*

Thank you for your consideration.

Respectfully submitted,

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