

**NEW YORK STATE BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT**

In the Matter of:

Case: 18-F-0325

Application of Danskammer Energy, LLC for a
Certificate of Environmental Compatibility and Public Need
Pursuant to Article 10 for Approval to Repower its
Danskammer Generating Station Site Located in the Town of
Newburgh, Orange County.

**RENEWED JOINT MOTION OF HUDSON RIVER SLOOP CLEARWATER, ORANGE
RAPP, RIVERKEEPER, SCENIC HUDSON, INC. AND SIERRA CLUB TO STRIKE,
OR IN THE ALTERNATIVE, FOR ADDITIONAL INFORMATION**

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INTRODUCTION

Danskammer (“the Company”) maintains that its proposed fossil gas plant is compliant with the Climate Leadership and Community Protection Act (“CLCPA”) and eligible for a Certificate of Environmental Compatibility and Public Need because the proposed plant could someday convert to operation on renewable natural gas (“RNG”) or hydrogen. The Company sketched out the bare bones of its claim in its speculative and non-specific Third Application Supplement, filed in July 2020. In response, Hudson River Sloop Clearwater, Orange RAPP, Riverkeeper, Scenic Hudson, Inc., and Sierra Club (collectively, “Movants”) filed a joint motion requesting that the Siting Board either (1) strike Danskammer’s speculative discussion of RNG and hydrogen as a basis for finding CLCPA compliance and by extension granting Danskammer’s application for an Article 10 Certificate or (2) issue a second deficiency notice directing Danskammer to submit additional information to fully detail its proposals. Dkt. No. 111 (“Motion”). Shortly thereafter, on September 8, 2020, the Chair of the Siting Board issued a second notice of deficiency requiring Danskammer to provide additional information “to fully detail the Applicant’s proposal regarding the use of RNG and/or hydrogen.” Dkt. No. 114 (“Second Deficiency Notice”). Specifically, the Chair of the Siting Board directed Danskammer to submit/explain:

- information demonstrating that the use of RNG and/or hydrogen is feasible at the Danskammer Facility;
- what if any reconfiguration and/or additional infrastructure would be needed to convert the Facility to RNG and/or hydrogen;
- whether the Applicant intends to commit to the use of RNG and/or hydrogen; and
- an explanation of how either RNG or hydrogen would qualify as a renewable energy resource and/or a zero emissions carbon resource within the meaning of the CLCPA and PSL §66-p.

Id. at 3. On that same date, the New York State Department of Environmental Conservation also issued a notice to Danskammer, informing the Company that its Title V Air Permit Application

was incomplete. Dkt. No. 115 (“DEC Notice”). DEC directed Danskammer to provide, among other things, “additional information regarding the feasibility of utilizing renewable natural gas (RNG), including analysis to support the assumption that all combustion of RNG would result in zero on-site greenhouse gas (“GHG”) emissions, and an evaluation of the anticipated adequacy of RNG supply.” *Id.* at 2 (emphasis added).

Danskammer’s Fourth Supplement largely fails to address these deficiencies and reveals the Company’s strategy for what it is—a greenwash intended to masquerade a new fossil gas plant as clean generation compliant with the CLCPA. Movants therefore renew their August 28, 2020 motion and request that the Siting Board either (1) strike Danskammer’s discussion of RNG and hydrogen as a basis for finding CLCPA compliance and by extension as a potential basis for granting Danskammer’s application for an Article 10 Certificate or (2) issue another notice of deficiency directing Danskammer to either fully detail its proposals on RNG and hydrogen or withdraw them from consideration.¹

ARGUMENT

I. Danskammer Fails to Address Deficiencies as to Hydrogen.

Danskammer’s Fourth Supplement once again raises more questions than answers on hydrogen. It does not satisfy the Siting Board’s Second Deficiency Notice and fails to answer many of the questions posed in the initial Motion to Strike. *See* Motion at 3-4 (listing questions unanswered by Danskammer’s Third Supplement).

¹ As stated in the August Motion, Movants strongly disagree with the substance of Danskammer’s claims on CLCPA consistency, but do not address those substantive arguments here. This Motion focuses on the decision before the Siting Board at this moment—whether Danskammer has cured the identified deficiencies such that the Company’s application is complete, compliant with Section 164 of the Public Service Law, and sufficient for review by the Siting Board.

Although the Fourth Supplement promises a broader plan on hydrogen, the Company's concrete consideration of hydrogen begins and ends with the use of a Mitsubishi turbine capable of running on up to thirty percent hydrogen. Dkt. No. 119 at 10 ("Fourth Supplement"). The Mitsubishi turbines cannot currently run on 100% hydrogen, though Mitsubishi hopes to achieve such operation with further technological development and future retrofits. *Id.* at 10. But even assuming the turbines were capable of running on 100% hydrogen, Danskammer does not explain—and does not appear to know—how operating the proposed plant on hydrogen would actually work. Without a concrete plan for such operation, Danskammer's Fourth Supplement lacks essential details on the reconfiguration and additional infrastructure necessary to convert to hydrogen, though these infrastructure changes would necessarily be substantial.

Danskammer's Fourth Supplement makes much of the proposed Intermountain Power Project in Utah, which it claims will operate on 30% hydrogen by 2025 using the same Mitsubishi turbines. *Id.* at 11. In describing the Intermountain Project, Danskammer explains the "green hydrogen fuel supply production [for the project] is being developed at the Advanced Clean Energy Storage project adjacent to the site, which will make use of an existing salt dome to store green hydrogen produced from renewable electric generation through electrolysis on site." *Id.* However, Danskammer provides no parallel explanation for the production, supply, and use of hydrogen at its own site.

For example: where would the hydrogen come from? If Danskammer would produce the hydrogen itself, where would Danskammer site the electrolyzers—and where is the source of the renewable energy needed to run them? If Danskammer is not planning to produce its own hydrogen, what is the presumed origin(s) of that hydrogen? Danskammer does not identify any

large-scale hydrogen producer (existing or proposed), let alone a regional green hydrogen producer capable of supplying the Danskammer site.

Additional questions arise on storage: where would Danskammer store the hydrogen? Would storage need to be built or do suitable geological formations exist nearby? How does local storage capacity correlate with the plant's generation capacity? These questions too are unanswered, even as Danskammer appears to contemplate storage of some duration. Fourth Supplement at 9, 21 (“Hydrogen produced as a result of electrolysis can then be stored and combusted by dispatchable energy resources, like the Project, to produce electricity when it is needed.”).

And if hydrogen would be produced by others, purchased, and piped to Danskammer, the Fourth Supplement does not explain how. Rather, Danskammer admits that existing pipelines can carry no more than 10% hydrogen due to embrittlement and other issues. The most Danskammer offers is that long-term, new infrastructure “could” be developed. *Id.* at 12.

Lacking real answers to these vital questions on operation and infrastructure, Danskammer concedes that it cannot demonstrate the feasibility of using hydrogen at the Danskammer site—and therefore will not commit to using hydrogen at scale. Instead, the most Danskammer promises is that it “would consider agreeing to a Certificate Condition” setting forth a pilot study that would “assess the technical feasibility of producing green hydrogen in a way that could ultimately be utilized at a larger scale by the Project.” *Id.* at 18-19 (emphases added); *see id.* at 10 (“Danskammer believes that the use of green hydrogen will be feasible in the future. . . .”).²

² Danskammer's refusal to commit to hydrogen may also be tied to hydrogen's high cost and corresponding competitive disadvantage. *See* Dkt. No. 107 at 30 (“Third Supplement”) (“[T]he cost of the hydrogen supply is forecasted to be in line with the high end of the RNG supply

Danskammer’s assertions on whether hydrogen would qualify as renewable and/or zero emissions are also incomplete. Danskammer now suggests its plant could someday operate on “green” hydrogen, which it defines as “hydrogen fuel produced using renewable energy as the primary energy source.” Fourth Supplement, Exhibit 1 at 4 n.4 (emphasis added). However, Danskammer does not explain what secondary energy sources might be used to produce its purportedly green hydrogen. Burning any percentage of hydrogen produced using fossil fuel cannot be deemed either renewable or zero emissions. And hydrogen, which is prone to leakage due to its small molecule size, is itself an indirect greenhouse gas with a global warming potential of 5.8 over 100 years.³ And combusting hydrogen, even if zero carbon, would not eliminate the emission of harmful co-pollutants such as nitrogen oxide (NO_x).⁴ Danskammer does not account for the difficulty of controlling NO_x pollution as the percentage of hydrogen combustion increases or provide emission estimates for hydrogen combustion scenarios.⁵

curve. . . .”); Fourth Supplement at 11-12 (“Federal and/or state incentives to stimulate volume production and create market demand will be needed to reduce the equivalent price differential [between green hydrogen and other fuels].”).

³ See, e.g., Richard Derwent et al., *Global Environmental Impacts of the Hydrogen Economy*, 1 Int. J. Nuclear Hydrogen Production and Application 57 (2006), https://www.researchgate.net/publication/228402009_Global_environmental_impacts_of_the_hydrogen_economy; *Best Practices Overview: Hydrogen Leaks*, H2 Tools, <https://h2tools.org/bestpractices/hydrogen-leaks> (last visited Jan. 7, 2021).

⁴ See, e.g., Clean Energy Group, *Hydrogen Hype in the Air* (Dec. 14, 2020), <https://www.cleangroup.org/hydrogen-hype-in-the-air/> (“The bad news is that H2 combustion can produce dangerously high levels of nitrogen oxide (NO_x). Two European studies have found that burning hydrogen-enriched natural gas in an industrial setting can lead to NO_x emissions up to *six times that of methane* (the most common element in natural gas mixes). There are numerous other studies in the scientific literature about the difficulties of controlling NO_x emissions from H2 combustion in various industrial applications. Even the Trump Administration’s Department of Energy ‘Hydrogen Program Plan’ identifies H2 combustion as a significant problem.”) (emphasis original).

⁵ The Mitsubishi Power promotional materials attached to the Fourth Supplement indicate its turbines will use “dry low NO_x” combustion technology. Fourth Supplement, Exhibit 2 at 2, 5. No details or emission specifications are provided and Mitsubishi Power concedes the technology to operate on high hydrogen percentage rates is unproven. *Id.* at 6-9.

With so many questions left unanswered, Danskammer’s Application and First through Fourth Supplements cannot be viewed as a legitimate proposal to operate on hydrogen.

II. Danskammer Fails to Address Deficiencies as to RNG.

The Fourth Supplement discusses RNG only briefly and does little to correct the deficiencies identified by the Siting Board and DEC following the Third Supplement. *See* Fourth Supplement at 19-23.

With respect to feasibility, the Fourth Supplement merely summarizes and refers back to the Third. *Id.* at 19-20. But as explained in Movants’ Motion to Strike, the Third Supplement’s feasibility inquiry consists exclusively of a broad-strokes analysis of the likely available feedstock supply in the entire U.S. eastern seaboard. Motion at 3. Danskammer still has not identified a single RNG supply or interconnection project under development that would be capable of supplying a plant at the Danskammer site.⁶ This fails to address DEC’s request—following review of the Third Supplement—for “an evaluation of the anticipated adequacy of RNG supply.” DEC Notice at 2.

As with the Company’s approach to hydrogen, Danskammer also does not commit to operating on RNG. Fourth Supplement at 20 (“Danskammer is not committing to any particular future CLCPA consistent approach, or fuel . . .”). Instead, Danskammer offers only that it is “willing to consider agreeing to a Certificate Condition” that it will comply with the CLCPA in 2040. *Id.* at 20-21. In this respect the Company offers nothing at all because Danskammer is

⁶ The Fourth Supplement does clarify that no modifications or reconfiguration would be necessary at the Danskammer site in order to operate on RNG because the same infrastructure Danskammer proposes to use for fossil gas can also be used for RNG. This addresses one of the four stated deficiencies as to RNG.

already obligated to comply with the CLCPA whether or not a specific certificate condition sets forth that requirement.

Danskammer’s discussion on how RNG might qualify as zero emissions is similarly lacking. To begin, Danskammer’s claim that RNG is at minimum carbon neutral, *id.* at 21, is unjustified, as carbon emissions from RNG production and use vary widely depending on the feedstock.⁷ As previously noted in the Motion to Strike, Danskammer’s all-feedstock approach to sourcing RNG contemplates both the generation of new methane sources (e.g. thermal gasification of energy crops and forest and agriculture residues) as well as the promotion and use of methane from sources that would be better eliminated through alternative resource and waste management processes (e.g. animal manure and food waste). Motion at 4. Incentivizing the generation of, and then ultimately burning, RNG from such sources is not carbon neutral,⁸ and Danskammer’s Fourth Supplement in no way commits to sourcing RNG only from truly environmentally beneficial sources.

And even assuming the accuracy of Danskammer’s claim, “carbon neutral” is not “zero emissions” as discussed in the Second Deficiency Notice and the CLCPA. As Danskammer concedes, burning RNG—like all methane—produces carbon dioxide (CO₂), a greenhouse gas. *Id.* at 22. Hoping to buttress a weak argument, Danskammer suggests that a CO₂-emitting gas plant operating on RNG should nonetheless qualify as zero emissions when taking into account “emission reductions from the capture and use of methane.” *Id.* The Company claims such an approach is CLCPA-consistent because the statutory definition of Statewide Greenhouse Gas

⁷ See Emily Grubert, *At Scale, Renewable Natural Gas Systems Could Be Climate Intensive: The Influence of Methane Feedstock and Leakage Rates*, 15 *Envtl. Res. Letters* 084041 (2020), <https://iopscience.iop.org/article/10.1088/1748-9326/ab9335/pdf>.

⁸ *Id.* at 4 (“ . . . RNG from intentionally produced methane is always GHG positive unless total system leakage is 0.”).

Emissions “includes upstream GHGs associated with extraction of fuels used to produce electricity.” *Id.*

In reality, Danskammer proposes an offset scheme explicitly barred by the CLCPA. CLCPA § 2, N.Y. E.C.L. § 75-0109(4)(a) & (f) (“[DEC] may establish an alternative compliance mechanism to be used by sources subject to greenhouse gas emissions limits to achieve net zero emissions” but “[s]ources in the electric generation sector shall not be eligible to participate in such mechanism”); *id.* § 75-0109(4)(g)(ii) (prohibiting “biofuels used for energy or transportation purposes” from the alternative compliance mechanism). Though an offset/netting approach may be used to achieve the final 15% of emissions reductions under the CLCPA’s sector-wide 2050 greenhouse gas limit, the CLCPA electric sector limits afford no such flexibility. *Compare* CLCPA § 1(4) *and* CLCPA § 2, N.Y. E.C.L. § 75-0107(1) (sector-wide greenhouse gas emission limit requires reducing emissions by 85% of 1990 levels and eliminating net emissions by 2050), *with* CLCPA § 4, N.Y. P.S.L. § 66-p(2) (electric sector must be zero emissions by 2040).

Given Danskammer’s inability to fully address the stated deficiencies, its proposal on RNG must also be discounted as speculative and incomplete.

III. Danskammer’s Proposed Project Must Be Evaluated for What It Is: a Fossil Gas Plant.

Unless and until Danskammer sets forth a more detailed and viable proposal to operate on an alternative fuel source and makes a legally binding commitment to do so, the Company’s proposed project must be evaluated for what it actually is—a proposal to build a new fossil gas plant at a time the state must move swiftly toward a complete transition to clean and zero emission resources. To the extent Danskammer does ultimately provide a comprehensive proposal for such operation, the Company must further justify the timing of said proposal. If

Danskammer proposes to operate for many years as a fossil gas plant, and only later switch to a different fuel, then Danskammer must explain why it is nonetheless CLCPA-consistent to build and operate that fossil gas plant now as opposed to simply waiting and building, e.g., a hydrogen plant in 2040 if and when such an action proves desirable. As it stands, the Siting Board cannot rely on Danskammer’s speculative, incomplete, and above-all non-committal RNG/hydrogen proposals to ensure that the project serves the public interest, is beneficial to the electric generation capacity of the state, and will operate in compliance with state law and state energy policy as required by N.Y. P.S.L. § 168. *See also* CLCPA § 7(2) (“In considering and issuing permits, licenses, and other administrative approvals and decisions, . . . all state agencies . . . shall consider whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits established in [N.Y. E.C.L. § 75-0107].”).⁹

CONCLUSION

For the foregoing reasons, Movants respectfully request that the Siting Board either (1) strike Danskammer’s discussion of RNG and hydrogen as a basis for finding CLCPA compliance and by extension granting Danskammer’s application for an Article 10 Certificate or (2) issue another notice of deficiency directing Danskammer to either fully detail its proposals on RNG and hydrogen or withdraw them from consideration.

⁹ *Cf.* CLCPA § 2, N.Y. E.C.L. § 75-0109(3)(b) (requiring DEC to promulgate regulations to ensure that greenhouse gas reductions are “real, permanent, quantifiable, verifiable, and enforceable”).

Respectfully Submitted,

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