



SUBMITTED ELECTRONICALLY

June 14, 2022

John Rotolo
Chief Engineer
Passaic Valley Sewerage Commission
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RE: Clean Energy Group Comments on Title V Operating Permit Significant Modification Application and Compliance Statement for Proposed Standby Power Generation Facility

Dear Mr. Rotolo:

Clean Energy Group (CEG), a national nonprofit organization that has been advocating for clean energy solutions since 1998, respectfully submits the following comments regarding the Title V Air Permit Modification Application¹ and Compliance Statement² submitted by Passaic Valley Sewerage Commission (PVSC) for a Standby Power Generation Facility Project (SPGF) at its main facility in Newark, New Jersey.

To fulfill its mission, CEG works to ensure that the benefits of the clean energy transition are equitably distributed and accessible to people of color, low-income communities, and other historically underserved communities. CEG helps to develop and disseminate innovative clean energy programs and deployment strategies that could be replicated across the country. Through these efforts, CEG is involved in multiple community-led initiatives to replace polluting fossil fuel infrastructure with clean renewable generation and energy storage alternatives. CEG's [Phase Out Peakers](#) initiative has modelled the deployment of energy storage and renewable generation for peaker plant replacements in several locations nationally, including New York City.³ This

¹ Passaic Valley Sewerage Commission, *Title V Operating Permit Significant Modification Application for Proposed Standby Power Generation Facility* (July 2, 2021)

<https://www.state.nj.us/dep/agpp/downloads/publicnotpost/pvscepn.pdf>

² Passaic Valley Sewerage Commission, *Standby Power Generation Facility Project Program Interest ID No. 07329 BOP 190004, AO 2021-25 Compliance Statement* (March 30, 2022) <https://www.nj.gov/dep/ej/docs/njdep-ao-2021-25-compliance-statement.pdf>

³ PEAK Coalition and Strategen, *The Fossil Fuel End Game: A Frontline Vision to Retire New York City's Peaker Plants by 2030* (March 2021) <https://www.cleanegroup.org/ceg-resources/resource/fossil-fuel-end-game>

analysis has repeatedly demonstrated that fossil fuel turbines can be cost-effectively replaced by battery storage technologies.⁴

ENERGY STORAGE – BATTERIES

In its March 30, 2022, Compliance Statement, PVSC stated that “battery storage is considered a technically infeasible option for replacing the SPGF.” CEG disagrees with PVSC’s findings on several counts.

First, it is unclear why PVSC has chosen to design the SPGF to maintain power continuously over a 14-day period. This is an unprecedented outage duration, and PVSC provides no indication that the proposed SPGF would have assured access to sufficient onsite gas supplies at the facility to power the turbines over 14 continuous days in the event that gas supply becomes compromised. Past severe weather events, such as Superstorm Sandy, have clearly demonstrated that such fuel supply disruptions are not uncommon. Weather-related gas supply disruption can occur even when supply agreements are classified as “firm” and “uninterruptible.”

Second, onsite siting of solar PV paired with battery storage, while perhaps not sufficient to fully supply maximum power demands to the facility over a 14-day period, would be capable of fully powering the facility throughout much more frequent, shorter duration events. Battery storage paired with solar may also have the potential to keep the facility running at a reduced level throughout long-duration, multi-day outages. Recent analysis by the consultant E3 on behalf of the New York Power Authority found that “[a] review of recent battery storage projects in New York City and other constrained urban areas indicated that storage projects can have a density ranging between 23 to 30 MW per acre, or up to 40 MW per acre under certain conditions.”⁵ Based on these findings, a 34-MW battery system could feasibly be installed within the 1.5-acre area allotted for the proposed SPGF. PVSC indicated that total area available on the property is seven acres, which would accommodate the development of a much larger storage system.

Developing a 34-MW, four-hour duration battery system at the site may not entirely eliminate the need for an alternative power solution to provide power during longer-duration outages, but it would eliminate the need to run the SPGF for up to 48 hours in advance of major storms, as requested by PVSC. Unlike gas turbines, batteries have the ability to instantaneously provide maximum power to a facility to prevent an uncontrolled shutdown of the facility in the event of a power disruption. A four-hour duration system would provide ample capacity to meet the energy needs of the facility during regularly occurring power outages and would give the facility time to pursue alternate power options, such as mobile generators, during the unlikely event of an extended outage. The development of onsite solar PV would further extend the time a battery system could provide power to the facility.

⁴ Clean Energy Group, Massachusetts Climate Action Network, and Strategen, *Assessment of Potential Energy Storage Alternatives for Project 2015A in Peabody, Massachusetts* (July 28, 2021) <https://www.cleanegroup.org/ceg-resources/resource/energy-storage-alternatives-peabody-ma>

⁵ New York Power Authority, *Small Clean Power Plant Adaptation Study* (April 2022) <https://www.nypa.gov/-/media/nypa/documents/document-library/NYPA-SCPP-Adaptation-Study.pdf>

Third, it is not clear from the Compliance Statement as to whether the facility could alter operations during infrequent extended-duration grid outages. In the Compliance Statement, PVSC states:

“The PVSC Wastewater Treatment Plant historical average and maximum electrical power demand is 23 megawatts (MW) and 28 MW, respectively. The current planned power consumption is 34 MW to accommodate new flood mitigation measures being implemented under the FEMA Resiliency Program.”⁶

This indicates that the facility typically operates at an average demand of 23 MW and may increase its maximum demand to 34 MW due to planned modifications. This does not mean that the facility will require a constant energy supply of 34 MW to fully operate, nor does it indicate whether it would be possible to reduce energy consumption while still maintaining basic operations during an emergency outage situation. PVSC should provide additional information about anticipated average consumption after modifications are made and describe any actions that could be taken to reduce energy consumption from nonessential loads during an emergency. Any measure that would reduce the average energy needs of the facility would enhance the ability of onsite battery storage and solar to maintain operations during an outage.

Fourth, while not a consideration for technical feasibility, the addition of battery storage to the facility could provide both economic benefits to PVSC by reducing onsite energy demand and grid benefits to PSE&G, boosting grid stability to help prevent brownout or blackout conditions and lowering costs for all ratepayers. Nearby states, such as Connecticut and Massachusetts, have implemented battery storage programs to reduce strain on the grid by calling on batteries to discharge when the grid is strained during times of peak energy demand.⁷ New Jersey has adopted a target of installing 2,000 MW of energy storage by 2030 and is actively working to craft new policies and programs to meet that goal.

Finally, eliminating the need to install three 28-MW gas turbines operating up to 592 hours each year in a community already unjustly overburdened with fossil pollution would have significant environmental, climate, and public health benefits. The impact of avoiding these emissions should not be discounted or overlooked, particularly in light of the passage and forthcoming implementation of New Jersey’s Environmental Justice Law.

GREEN ADVANCED RENEWABLE FUELS

Clean Energy Group strongly disagrees with the feasibility of PVSC’s intent to convert the proposed combustion turbines “to use of Green Advanced Renewable Fuels as quickly as practicable,” as stated in the Compliance Statement.

⁶ Passaic Valley Sewerage Commission, *Standby Power Generation Facility Project Program Interest ID No. 07329 BOP 190004, AO 2021-25 Compliance Statement* at 33

⁷ Clean Energy Group and the Clean Energy States Alliance, *Energy Storage Policy Best Practices from New England: Ten Lessons from Six States* (August 2021) <https://www.cleanegroup.org/ceg-resources/resource/energy-storage-policy-best-practices-from-new-england>

PVSC states that the manufacturer of the turbines anticipates that the turbines “will accept 65% hydrogen, with the goal of being 100% hydrogen capable by 2030.” At this time, there are no commercially available gas turbines that can tolerate a 65% hydrogen blend with natural gas, much less 100% hydrogen combustion, which would likely require complete replacement of the turbines and related infrastructure. Even if such technology was available today, combustion of hydrogen at the facility raises significant public health and safety concerns for the facility and surrounding communities. Hydrogen is much more prone to explosion than natural gas and, when burned, can produce six times the level of nitrogen oxide (NOx) emissions as natural gas.⁸ Switching the proposed turbines to hydrogen combustion will not alleviate environmental justice concerns related to the project.

In light of these concerns, CEG strongly recommends that the New Jersey Department of Environmental Protection denies PVSC’s proposed development of 84 MW of new gas combustion in an environmental justice community and directs PVSC to reexamine the feasibility of clean alternative options, specifically energy storage and solar.

Respectfully submitted,



Seth Mullendore
President and Executive Director
Clean Energy Group

CC: David Pepe, New Jersey Department of Environmental Protection

⁸ Clean Energy Group, *Five Reasons to Be Concerned About Green Hydrogen* (September 2021)
<https://www.cleanegroup.org/ceg-resources/resource/five-reasons-to-be-concerned-about-green-hydrogen>