

FEDERAL ENERGY REGULATORY COMMISSION

Matter of Premium Energy Holdings, LLC : Project No. 15056-000

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Comments of the New York City Watershed Inspector General

The Office of the New York City Watershed Inspector General (WIG) hereby submits comments in *Matter of Premium Energy Holdings, LLC*, Project No. 15056-000 (the Project).¹

In this matter, Premium Energy Holdings, LLC requests the grant of a preliminary permit, pursuant to section 4(t) of the Federal Power Act (FPA), authorizing the study of the feasibility of the Ashokan Pumped Storage Project to be located at New York City’s Ashokan Reservoir, and granting the application the right to proceed with project implementation permitting.

As discussed below, the application for a preliminary permit should be denied and the Project should not move forward because the Project is legally barred under the New York State Constitution and Section 21 of the Federal Power Act, and would likely cause irreparable adverse impacts to the Ashokan Reservoir, the New York City Watershed (Watershed), the City’s drinking water supply system, and local recreational opportunities. Simply put, constructing and operating a pumped storage facility at the most sensitive of sites for public drinking water quality- the Ashokan Reservoir - is not acceptable and should not be seriously considered.

¹ Housed in the Office of the New York State Attorney General, the WIG was established by an Executive Order of New York’s Governor following the execution in 1997 of a Memorandum of Agreement (MOA) to protect the New York City Watershed by New York State, New York City, the Coalition of Watershed Towns, the United States Environmental Protection Agency, environmental groups, and Watershed counties and municipalities. *See* 9 NYCRR § 5.86. The position of WIG is the product of an agreement of the parties to the MOA to “enhance current efforts to protect the New York City drinking water supply from activities that have the potential to adversely affect the New York City Watershed reservoirs and tributaries.” *Id.* The WIG’s “powers, duties, and responsibilities” [include] recommending legislative, regulatory and management practice changes.” *Id.* The WIG is charged with the task of protecting the New York City Watershed from proposed projects with potentially significant adverse effects to the water supply, the type of proposal that is the basis for this proceeding. The WIG has a critical role independent from other state and municipal entities in New York in this proceeding, and no other party can adequately represent the WIG’s interest.

I. The New York City Water Supply

The New York City Water Supply System is a complex system of reservoirs and conveyances that provides drinking water to nine million residents of New York City and other nearby communities. The system draws water from three sub-systems: the Catskill, Delaware, and Croton systems. Typically, the Catskill system supplies 40 percent of the water, with the Delaware and Croton systems supplying 50 percent and 10 percent, respectively.

The Catskill and Delaware systems, located in upstate New York west of the Hudson River, are unfiltered surface water supplies.² The only treatment they receive is disinfection from a UV plant and chlorine. Instead of filtration, the City has worked with Watershed stakeholders to implement a Watershed Protection Program, expending over \$1.7 billion on programs to ensure the quality of its water and the vitality of the communities that make up the Watershed.

The proposed project lies within the watershed of the Catskill system. In the Catskill system, water is collected in the Schoharie Reservoir and then diverted by the Shandaken Tunnel into the Esopus Creek, which then feeds the Ashokan Reservoir—where the project would be sited—before being transported by gravity in an aqueduct under the Hudson River to the Kensico Reservoir in Westchester County for distribution to consumers.

II. The Project

The Preliminary Permit application proposes a two-year period to conduct a feasibility study for the Pumped Storage Facility Project. Under the proposal, the Ashokan Reservoir would be used as a lower reservoir, and an upper reservoir would be constructed at the Wittenberg Stream in Olive, the Woodland Valley Stream in Shandaken, or the Stony Clove Creek in Hunter. Hydroelectric energy would be generated by pumping water up a tunnel from the Ashokan Reservoir to the upper reservoir. The water in the upper reservoir would then be released down the tunnel at great velocity and flow through turbines to be housed in an underground facility near the Ashokan Reservoir, thereby generating electricity.

From an energy perspective, the amount of energy used to pump the water uphill would exceed the amount of electricity generated through the turbines. But the pumping would occur during off-peak hours when electricity prices are relatively low and the release of water down the tunnel would occur during peak periods when prices are relatively high, allowing for an arbitrage profit. From a climate change perspective, the Project offers the potential benefit of replacing peak

² The Croton system is filtered.

load fossil fuel generated electricity with pumped storage electricity having a much smaller climate change footprint.

The Project will create disturbances on State-owned Catskill Forest Preserve land and on City-owned Watershed land. The footprint of the upper reservoir would be between 200 and 300 acres. Underground tunnels with diameters of 29 to 50 feet would be constructed along with underground facilities for a power house and transformer station. The underground facilities located near the Ashokan Reservoir would be large; the powerhouse is estimated to be 550 feet long by 25 feet wide and 150 feet high, and the transformer station 165 feet long by 60 feet wide by 50 feet high. About 12 to 17 miles of transmission lines would also be constructed to serve the Project.

The sponsor claims that the Project forms a “closed loop” system, but it is really an “open loop” system. The Department of Energy defines an open-loop pumped storage facility as a system which is continuously connected to a naturally flowing water feature.³ Conversely, a closed-loop system is not continuously connected to a naturally flowing water feature. Here the Ashokan Reservoir is continuously connected to the upper and lower Esopus Creek, so the proposed system is open loop.

III. The Importance of Preventing Turbidity in the Ashokan Reservoir

The Ashokan Reservoir receives water from the upper Esopus Creek, which in turn receives flow from the Schoharie Reservoir via the Shandaken tunnel. Ashokan water typically flows through the 75-mile long underground Catskill Aqueduct, to the Kensico Reservoir before it is distributed to consumers following disinfection.

The Ashokan Reservoir is often characterized by high levels of turbidity due to geological conditions in the Catskill Watershed. In particular, the beds of Catskill streams that feed the Ashokan are composed of fine glacial sediments that mobilize in large storms and annual snow melt and take a long time to settle out. This phenomenon creates significant water quality problems and compliance issues when turbid Ashokan water is dispatched down the Catskill aqueduct to the Kensico Reservoir.

The City’s drinking water supply system, including the Kensico Reservoir, is regulated by the federal Safe Drinking Water Act, 42 U.S.C. § 300f *et seq.* (SDWA). Under the SDWA, the United States Environmental Protection Agency promulgated

³ Bo Saulsbury, *A Comparison of the Environmental Effects of Open-Loop and Closed-Loop Pumped Storage Hydropower*, United States Department of Energy (April 2020) at p. v.

the Surface Water Treatment Rule, which requires that a public drinking-water system supplied by surface waters satisfy water quality standards, either by installing a filtration system or by meeting criteria, including a “watershed control program,” to protect the quality of the water in the absence of filtration. *See* 40 C.F.R. §§ 141.70, 141.71. The City has developed and implemented a comprehensive Watershed Protection Program to comply with this requirement. Under EPA regulations, the City has avoided filtration of Kensico Reservoir water pursuant to several filtration avoidance determinations issued by EPA or the New York State Department of Health since the 1990s.

Under the SDWA, Kensico water must comply with water quality standards for turbidity and pathogens. EPA prohibits raw water turbidity measurements in unfiltered drinking water (such as the Kensico Reservoir) at the intake to the distribution system in excess of 5 nephelometric turbidity units. *See* 40 CFR § 141.71(a)(2). Violations of this turbidity standard could provide grounds for the New York State Department of Health, which now holds primacy in enforcing filtration avoidance regulations under the SDWA, to require that the City filter Kensico water at a cost of many billions of dollars. In the 2007 Filtration Avoidance Determination, EPA found that “significant improvement to the City’s ability to prevent, manage, and control turbidity in the Catskill System [which supplies almost half of the water in Kensico Reservoir] is required in order to maintain filtration avoidance for the long-term.”⁴

During periods of very high turbidity resulting from large storms, the City has introduced alum into the Catskill Aqueduct to reduce turbidity in the Kensico Reservoir and thereby prevent violations of the SDWA’s turbidity limit. Alum acts as a coagulant, causing particles in water to clump together and settle out near the discharge point. But alum is a disfavored remedy as the New York State Department of Environmental Conservation has determined that the addition of alum violates the narrative water quality standard for suspended and settleable solids in the Kensico Reservoir. Accordingly, pursuant to the City’s Catalum SPDES permit, it must take actions to reduce turbidity so that the amount and frequency of alum additions are also reduced.

Among those actions is use of an Operations Support Tool (OST), a key component of the Catskill Turbidity Control Program. OST is a combined water quantity/water quality model that simulates water availability and quality throughout the City’s water supply system and is used to inform decisions about system operation and planning, and especially decisions affecting turbidity in the system. As described in a 2018 report by the National Academies of Science, Engineering, and Medicine:

⁴ 2007 FAD, pp. 13-14.

OST couples models of reservoir operations and water quality; it uses real-time data on streamflow, snow pack, water quality, reservoir levels, diversions, and releases; and it incorporates streamflow forecasts—all in order to predict future reservoir levels, water delivery to customers, and water quality within the system. These predictions inform the system operators, who then make decisions based on the most current data and forecasts. By running OST, system operators can account for changing environmental conditions and streamflow forecasts, providing valuable guidance for reservoir operations.⁵

Under the Project, the City would no longer have full control over the operation of the Ashokan Reservoir and would face the task of modifying the OST to address the impacts of the Project on the City’s water supply system.

IV. The Project is Unlawful and Causes Significant Adverse Impacts

a. The Project is Subject to a Permanent Legal Bar

As an initial matter, FERC “will not issue preliminary permits where there is a permanent legal bar to granting a license application.” *Matter of Lake Shannon Hydroelectric Company, LLC*, 118 FERC P 61117, 61595, 2007 WL 496836, **1 (Feb. 16, 2007)); see *Town of Summerville, W. Va. v. FERC*, 780 F.2d 1034, 1038-39 (D.C. Cir. 1986). As discussed below, the New York State Constitution and the Federal Power Act erect a permanent legal bar to issuance of a license for the Project. Accordingly, the preliminary permit should be denied.

The Project envisions encroaching on State lands in the Catskill Park (the Slide Mountain Wilderness Area or Mount Tobias Wild Forest) in violation of the New York State Constitution. The State of New York owns approximately 287,000 acres of land in the Catskill Park as forest preserve land, including those two areas. Under Article XIV of the New York State Constitution, forest preserve land is “forever wild;” it “shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed.” The State cannot legally take any action to facilitate the Project because it entails the clearing of hundreds of acres of

⁵ National Academy of Science, Engineering, and Medicine, *Review of the New York City Department of Environmental Protection Operations Support Tool for Water Supply* at 1-2 (2018).

forested Catskill Forest Preserve, thereby impairing the lands' "forever wild" character.

The Federal Power Act prohibits taking these State lands by eminent domain. Section 21 of the Federal Power Act, 16 U.S.C. § 814, states that:

no licensee may use the right of eminent domain under this section to acquire any lands or other property that, prior to October 24, 1992, were owned by a State or political subdivision thereof and were part of or included within any public park, recreation area or wildlife refuge established under State or local law.

The Slide Mountain Wilderness Area and Mount Tobias Wild Forest in the forest preserve of Catskill Park were acquired by the State before October 24, 1992. These lands are located "within any public park, recreation area or wildlife refuge." Accordingly, acquisition of these lands is permanently legally barred by the Federal Power Act as well as the New York State Constitution, and the preliminary permit should be denied on this basis. *See Matter of Symbiotics, LLC*, 98 FERC P 62192, 64341, 2002 WL 418414, *1 (Mar. 19, 2002) (preliminary permit denied where applicant could not use eminent domain to obtain rights over project lands, because part of the lands lie within the Lake Chabot Regional Park, which was established in 1966).

b. Adverse Turbidity and Ecological Impacts

The Project stands to contribute to increased turbidity in and near the Ashokan Reservoir, putting at risk the filtration avoidance status of the City's drinking water supply system. During the construction phase of the project, potentially hundreds of acres of steeply sloping forested land would be disturbed through development of the upper reservoir and 12 to 17 miles of new power lines. Construction of any one of the three potential upper reservoirs would occur in waterways that either drain directly to the Ashokan Reservoir or indirectly to the Ashokan via the Esopus Creek, which itself is subject to frequent turbidity problems. The construction and development of land is a major source of pollutants discharged to surface waterbodies. Discharges from construction sites include sediment which, when suspended in water contributes to turbidity in the water. Erosion rates from construction sites are much greater than from almost any other land use.⁶ Sediment loads in stormwater discharges from construction sites are typically 1,000 to 2,000 times the sediment loads in discharges from undeveloped

⁶ "National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Stormwater Discharges; Final Rule," 64 Fed. Reg. 68722, 68724, 68728. (Dec. 8, 1999).

forested land,⁷ the very land being disturbed by the Project. Moreover, if the Stony Clove Creek is chosen as the upper reservoir site, turbidity impacts from construction could overwhelm the water quality benefits previously achieved in that creek by the City's stream management program at significant expense, an important component of the Watershed Protection Program.

The operation of the Project is also likely to result in increases in turbidity in the Ashokan Reservoir and harm fish habitat. During summer, water in the Ashokan Reservoir is stratified, *i.e.* divided into discrete zones or layers with the warm water on top (epilimnion), a middle layer (metalimnion), and cold water on the bottom (hypolimnion). Once water flows through the turbines it would be discharged into the Ashokan Reservoir with considerable force and momentum. Depending on the density and temperature of the discharged water and the level at which it enters the Reservoir, the discharge will likely result in the mixing (destratification) of various layers of Ashokan water. That mixing can increase turbidity and water temperatures in the Ashokan. Temperature increases would harm the ability of the Reservoir to provide habitat for cold water fish such as trout, and also impair trout habitat in the downstream Lower Esopus Creek, which receives flow from the Ashokan.

Other adverse ecological impacts would occur. Decreases in flow downstream of the newly created upper reservoir can also result in the stream drying up. With less available water to support endemic stream populations, periphyton, invertebrate, and vertebrate habitat will be disturbed, which will impede aquatic organism survival and/or reproduction. Higher water temperatures can also result from less flow. These increased temperatures can discourage spawning trout from migrating up the tributary to lay their eggs.

c. Interference with the City's Operation of the Water Supply

The Project would interfere with the City's operation of the water supply system, including its reliance on the OST, both during the construction phase and the operational phase. The underground powerhouse and transformer station are to be constructed adjacent to the Ashokan Reservoir. Withdrawal from and reintroduction to the Reservoir of large quantities of water for the Project are likely to complicate the City's water supply decision making process. The OST would have to be modified to account for pumped storage activities, and the City might find its water supply constrained by decisions of the Pumped Storage Operator

⁷ EPA, "Storm Water Phase II Final Rule: Small Construction Program Overview (Fact Sheet 3.0)," EPA 833-F-00-013 (Jan. 2000), available at <http://www.epa.gov/npdes/pubs/fact3-0.pdf>.

based on conditions in the energy markets rather than what is best from a water quantity and water quality point of view.

d. Adverse Impacts to Public Recreation

The landmark Memorandum of Agreement of 1997 in the New York City Watershed between regulators, local communities, and other Watershed stakeholders is intended to “maintain and enhance the quality of the City’s drinking water supply *while protecting the economic vitality and social character of watershed communities.*” MOA, Article 1, Clause 6 (emphasis added).⁸ The Catskills depends crucially on recreation and tourism as key elements of its economy. Visitors and residents are drawn to this area for its scenic landscapes, outdoor recreation, and hunting and fishing. The Ashokan Reservoir supports a robust recreational fishery both within the reservoir and in its many tributaries where large, often native reservoir trout swim to spawn. Fishing in the Ashokan Reservoir and the downstream Lower Esopus Creek could be impaired by the Project because of temperature effects described above, entrainment where turbines can kill fish, and pressure changes. Pressure changes brought about by the movement of water from the Ashokan Reservoir (~600 feet above sea level) to and from the proposed Wittenberg and Woodland Reservoirs (~1,200 feet above sea level) or the Stony Clove Reservoir (~1,500 above sea level) can be lethal to fish in the Ashokan Reservoir with closed swim bladders (physoclistous fish), such as yellow perch, walleye and bass. Increased turbidity would discourage anglers and otherwise impair the natural aesthetic of the Reservoir and Esopus Creek.

The Project may significantly impact outdoor recreation, hunting, and fishing at the three alternative upper reservoir sites by submerging or restricting access to lands, including State or City lands or easements that are currently accessible to the public. The impoundment of streams to create the upper reservoir may displace terrestrial wildlife such as deer, fowl and other game that utilize such lands, and may significantly alter the fish populations and recreational fishery. Among the potential adverse impacts would be to the Woodland Valley Campgrounds and trailheads, and fishing in Woodland Valley Creek, if the Project were to select Woodland Valley as the location for the upper reservoir. Based on the description in the permit application, it would appear that access to the Campgrounds may even be blocked by the Project. If the Stony Clove Creek were to be the site of the upper reservoir, this could require rerouting of State Route 214, which is a scenic byway, potentially impairing the aesthetic value that the road provides.

⁸ See <https://www.dos.ny.gov/watershed/nycmoa.html>.

V. Conclusion

For the reasons described above, the preliminary permit should be denied and the Project should not move forward. The Project is legally barred by the New York State Constitution and the Federal Power Act, and would likely result in irreparable adverse impacts that would increase turbidity in the Ashokan Reservoir, putting filtration avoidance at risk. It would impair the City's operation of its drinking water supply system, and undermine recreational opportunities upon which the local economy depends. Simply put, placing a pumped storage facility at this most sensitive of sites - the Ashokan Reservoir - is a terrible idea that should not be seriously considered.

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New York, New York

/s/ Philip Bein

Philip Bein

New York City Watershed Inspector General
Claiborne Walthall

Assistant Attorney General

Charles Silver, Ph.D.

Watershed Inspector General Scientist

Joseph Haas, P.G.

Environmental Scientist

Jeremy Magliaro

Environmental Policy Analyst

Environmental Protection Bureau
New York State Attorney General's Office
28 Liberty Street
New York, NY 10005
(212) 416-8797
Philip.bein@ag.ny.gov