

DAVID S. LAPP
PEOPLE'S COUNSEL

WILLIAM F. FIELDS
DEPUTY PEOPLE'S COUNSEL

JULIANA BELL
DEPUTY PEOPLE'S COUNSEL

OPC

OFFICE OF PEOPLE'S COUNSEL

State of Maryland

6 ST. PAUL STREET, SUITE 2102
BALTIMORE, MARYLAND 21202
WWW.OPC.MARYLAND.GOV

BRANDI NIELAND
DIRECTOR, CONSUMER
ASSISTANCE UNIT

CARISSA RALBOVSKY
CHIEF OPERATING OFFICER

Who decided that the Piedmont transmission line is needed?

The Piedmont line is part of a package of transmission projects (called the “Window 3” projects) that the regional transmission operator, [PJM Interconnection, LLC](#), determined are needed to address transmission system reliability needs. PJM determines system reliability needs based on forecasted electric power demands in the PJM region and the resources available to meet those demands.

What was the process that PJM used to decide on the need for the Piedmont transmission line?

Every year, PJM forecasts and publishes a report of the electric demand on its system and for each of the service areas of the major electric utilities located in PJM’s service area (or “footprint”). The annual report includes forecasts for the PJM system for each year for the next fifteen years.¹ PJM also asks the utilities and other entities responsible for providing electric service to retail customers to identify potential “large load”² adjustments to that forecast that the entities project will occur. PJM determines whether to make these suggested adjustments to its annual forecast. Based on this forecast, PJM analyzes whether any increases in demand or retirements in generation resources—such as coal plants—over the first five to eight years of the forecast will cause transmission system reliability issues within any of the PJM subregions and zones. PJM then issues a plan each year—the [regional transmission expansion plan](#), or “RTEP”—to resolve any identified transmission system reliability issues resulting from the annual forecast. To create that plan, PJM undertakes a procurement to identify solutions and developers to implement those solutions.

In its 2022 RTEP, PJM concluded that numerous transmission grid reliability violations would occur by 2027 as a result of increasing demand and plant retirements. On February 24, 2023, PJM initiated a solicitation for the 2022 RTEP “Window 3” transmission system expansion projects. The solicitation ended on May 31, 2023, with the submission

¹ <https://www.pjm.com/-/media/library/reports-notice/load-forecast/2023-load-report.ashx>

² “Load,” in this context, means the usage or consumption of electricity on a power system. Demand is generally expressed in megawatts. See PJM Glossary, definition of “Demand (Load),” avail at. <https://www.pjm.com/Glossary>

of 72 proposals from 10 different bidders.

The PJM Board of Managers approved the PJM staff’s recommended solution for the 2022 RTEP Window 3 procurement—which included the Piedmont project—on December 11, 2023. According to [PJM’s RTEP 2023](#) (March 7, 2024), the approved projects are for more than \$5 billion, including “transmission enhancements driven by 7,500 MW of data center load growth in the Dominion Energy and Allegheny Power (FirstEnergy) zones.” The data centers are located in Northern Virginia (Dominion) and in Frederick County (Allegheny Power System/FirstEnergy). The projected 7,500 MW load growth, anticipated by 2028, is greater than the peak load of Maryland’s largest utility, BGE, that has built up over more than a century.

Was there sufficient opportunity for interested outside parties to evaluate PJM’s proposed transmission grid reliability solutions?

No. Stakeholders did not have anywhere near enough time to review the solutions and selection of developers for the Windows 3 projects. Stakeholders—including PJM members, such as OPC, the statutory representative of Maryland’s residential customers—had about one month to review the more than \$5 billion worth of proposed transmission investments.

The flaws in PJM’s process are detailed in a [letter to the PJM Board of Managers](#) that OPC sent on December 8, 2023. That letter pointed out the inadequacies of PJM’s process, particularly given the unprecedented scale of the procurement and the massive costs customers would incur. Among OPC’s concerns is the failure of PJM to provide a quantitative analysis of the different drivers of the asserted grid reliability violations and the overall lack of transparency—in particular PJM’s failure to distinguish the relative contributions to the need for the Windows 3 projects of data center load growth, the location(s) of that growth, power plant retirements, and other discrete and material factors driving the reliability violations. OPC also unsuccessfully [protested PJM’s Window 3 submission](#) to FERC.

How was Public Service Electric & Gas (“PSE&G”) selected for the Piedmont project?

Transmission projects of 500 kV that are part of the regional transmission expansion plan and address a reliability need more than three years into the future—such as the Piedmont line, which was identified as “needed” in 2023 to address forecasted circumstances in 2027—are subject to PJM’s competitive bidding process. That process allows PJM to select a qualified transmission line developer to develop and complete the transmission

project.

PSE&G is an electric utility serving retail electric customers in New Jersey, where it operates an extensive transmission and distribution system. It qualified as a developer to bid for components of PJM’s Window 3 procurement. PJM selected PSE&G as the winning bidder for the Piedmont transmission line segment of the Window 3 package of projects. As the winning bidder, PSE&G has the responsibility to design, finance, construct and operate the Piedmont transmission line and secure all the regulatory approvals and permits needed to enable the line’s construction and operation.

Why is reliability now a problem?

Because electricity knows no borders, it can be a challenge to pinpoint one cause for a violation of a reliability standard that needs a remedy. In the case of Window 3—including the Piedmont project—most of the need is being by data center growth, primarily in Northern Virginia. PJM’s 2023 RTEP report (at vi) summarizes the Window 3 projects as follows:

The PJM Board approved baseline projects in 2023 totaling over \$5 billion to address reliability criteria violations as part of 2022 RTEP Window No. 3. This includes transmission enhancements driven by 7,500 MW of data center load growth in the Dominion Energy and Allegheny Power (FirstEnergy) zones.

Even though it is widely acknowledged that the data centers are largely—if not exclusively—responsible for the projects, costs are allocated (as discussed below) based on the assumption that everyone—not just the data centers—benefits from the projects.

In a protest to the Federal Energy Regulatory Commission (“FERC”) of PJM’s Window 3 proposal, OPC argued that PJM should have performed a different analysis (a “multi-driver” analysis) to determine more specifically the source of the reliability concern. FERC denied OPC’s protest.

Is data center development in Frederick County (Quantum Loophole) behind the need for the Piedmont line?

Yes, in part. The data center growth in the Allegheny Power System (“APS”) is in Maryland utility Potomac Edison’s service territory, where Quantum Loophole is located. According to PJM’s 2023 Load Forecast, in 2028, there will be an additional 799 MW of new electricity load in the APS zone. From this information, it can reasonably be inferred

that of the 7,500 new electric load for 2028 that PJM attributes to data center growth, ~800 MW is located in Frederick, Maryland, at Quantum Loophole.

Did PJM consider alternatives to the Window 3 transmission projects?

OPC has been raising the alarm about PJM’s planning processes, both for its failure to be proactive and for not evaluating potential solutions to large transmission projects, such as battery storage and demand response. Today, modern technologies can provide less costly alternatives to mitigate or delay the need for large transmission projects, such as power line reconductoring and grid enhancing technologies—often called “GETS,” which help engineers extend the capacity of the existing system—and battery storage. For example, dynamic line ratings tell engineers when the wind cools transmission wires, enabling an increase in their capacity to carry more energy.

PJM does not consider non-transmission alternatives (such as new generation, batteries, or demand-side management of electric load) unless they are projects that are already in development and already approved. Thus, such potential cost-effective non-wires alternatives are typically left off the table in PJM’s project selection process, as was the case with the Window 3 projects.

Who will pay for the Piedmont Line?

PJM’s cost estimate for the Piedmont line is \$390 million. [PSE&G states that the project costs will be \\$424 million](#) when the line is in service after costs are adjusted for inflation. Because this figure is an estimate, it is very possible that the actual costs will be higher.

Because PJM deemed the Piedmont line and other Window 3 projects to be “needed for reliability” and the line is high-voltage, half of the costs will be spread out across PJM’s 13 states and the District of Columbia, based on a measure of their demand on the transmission system. The other half is allocated based on what PJM calls its “DFAX” methodology, which uses a power flow analysis to estimate the relative use of the new transmission facility by power flows into each PJM zone (referred to as locational deliverability areas or “LDAs”).

Under PJM’s proposed cost allocations, only approximately 50% of the costs of the Window 3 projects like Piedmont will be allocated to Virginia ratepayers—even though the need for those projects is overwhelmingly created by projected load growth within the Dominion LDA within Virginia.

What is at issue in the certificate of public convenience and necessity review at the Maryland PSC?

After PSEG decides on the path it wishes the line to take, it will file a request for a certificate of public convenience and necessity (“CPCN”) with the Maryland Public Service Commission. A CPCN will, among other things, delineate the final path in Maryland of the line. The CPCN process is a litigated proceeding similar to a trial, where parties—including OPC, state environmental regulators, affected counties and municipalities, and other interested individuals—have the opportunity to present evidence to the PSC on whether a CPCN should be granted for a proposed project. In determining whether to award a CPCN, the Commission is required to consider impacts that a line may have on the State and its residents, including damage to historic sites and environmental impacts. It is not uncommon for the CPCN proceeding to lead to changes in a project’s route or conditions to alleviate and mitigate the impact a project may have.

Maryland law requires the PSC to provide an opportunity for public comment and hold a public hearing on the application. The Public Service Commission’s current practice is to hold both virtual and in-person public hearings. Members of the public can also submit written comments by mail or through the Public Service Commission website. The Commission has a dedicated email address, piedmontcomments.psc@maryland.gov, at which it is already accepting comments.

Finally, the scope of Maryland’s review of a proposed transmission facility under the CPCN statute may be limited by federal laws and court decisions interpreting those laws.

Is the Piedmont line related to Maryland meeting its climate goals?

No. As discussed above, the primary driver of the Piedmont line is to deliver power for data centers in Northern Virginia. PJM also noted generation plant retirements as a contributor to the need for the line. In the recent past, a number of Maryland coal and oil-fired plants—including the Brandon Shores 1270 MW coal plant—have announced plans to retire. Those fossil fuel plant retirements are driven by economics. Because of their age, their lower efficiencies in generating electricity, their relatively long start-up and shut-down periods, and the fossil fuels they use, the plants are no longer competitive with gas, nuclear, solar, and wind. For several years, the plants have been selling very little energy into the PJM market, indicating they are not generating profits for their owners and making their retirement easily predictable. Although the plants sell very little energy, PJM determined that their ability to produce energy during peak conditions or at other times of stress on the grid is needed to meet reliability standards for the system until solutions are in place.

In fact, many of Maryland’s clean energy policies likely may lessen the growing need for the transmission infrastructure. For example, Maryland has an aggressive goals for development of battery energy storage. Increasingly, states and utilities are considering storage as a solution to mitigate the need for large transmission projects. Local solar generation facilities—sometimes in combination with storage—can also mitigate the need for transmission projects.

Will FERC’s recent order on transmission planning (Order No. 1920) affect the Piedmont project?

Not directly. FERC issued Order 1920, which requires long term transmission planning by regional organizations like PJM, after it had already approved the PJM’s Window 3 projects, and compliance filings by PJM to implement Order 1920 are not due until next year. Going forward and depending on implementation, Order 1920’s requirement for regional transmission organizations to create 20-year plans and the evaluation of different scenarios, including reconductoring and grid-enhancing technologies, should limit unnecessary transmission-line construction.

Unfortunately, PJM is seeking to maintain the status quo despite Order 1920. Separately, PJM has filed for changes to its agreement with its transmission-owning utilities that would undercut its independence and give even more influence to the utilities. OPC—and many others—are opposing PJM’s requests.

Does the Office of People’s Counsel have a position on the Piedmont project?

For years, OPC has been challenging PJM’s planning processes and governance procedures that led up to the \$5 billion-plus Window 3 transmission projects, but OPC has no specific position on the individual projects—including Piedmont—that are part of Window 3. Before PJM and FERC, we have consistently pursued greater transparency, consideration of alternatives to massive transmission buildouts, and identification of the drivers of reliability issues. Unfortunately, PJM has not publicly shared the data and analysis needed to evaluate, specifically, alternatives to the Piedmont project.

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