UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Consolidated Edison Company of New York, Inc. v. PJM Interconnection, L.L.C.	Docket Nos.	EL15-18-005
Linden VFT, LLC v. PJM Interconnection, L.L.C.		EL15-67-005
Linden VFT, LLC v. PJM Interconnection, L.L.C.		EL17-68-003
PJM Interconnection, L.L.C.		ER17-950-006
		(Not Consolidated)
Neptune Regional Transmission System, LLC and Long Island Power Authority v. PJM Interconnection, L.L.C.		EL21-39-000
PPL Electric Utilities Corporation		ER22-1606-000
PPL Electric Utilities Corporation Neptune Regional Transmission System, LLC Long Island Lighting Co.		ER22-1606-001 (Consolidated)

RESPONSE OF PJM INTERCONNECTION, L.L.C.
TO PAPER HEARING QUESTIONS

PJM Interconnection, L.L.C. ("PJM") hereby files this response to the questions posed by the Federal Energy Regulatory Commission ("Commission" or "FERC") in the Order on Remand issued in the above-captioned proceedings.[1] As discussed below, the Commission should find that the continued use of the solution-based distribution factor ("DFAX") method to assign cost responsibility for transmission solutions addressing short-circuit reliability violations is just and reasonable and remains consistent with cost causation principles.

[1] *Consol. Edison Co. of N.Y., Inc. v. PJM Interconnection, L.L.C.*, 194 FERC ¶ 61,179, at PP 72-76 (2026) ("Order on Remand").

I. BACKGROUND

A series of complaints gave rise to the issues addressed in the Order on Remand regarding the solution-based DFAX method, including, as relevant here, issues related to the appropriate methodology to allocate costs for transmission projects addressing short-circuit reliability issues.[2] On June 18, 2015, the Commission denied the ConEd Complaint;[3] on April 22, 2016, it denied the Linden Complaint;[4] and on February 20, 2020, the Commission denied the Second Linden Complaint.[5] Appeals of these complaint denials followed.

On August 9, 2022, the U.S. Court of Appeals for the District of Columbia Circuit, among other things, vacated the Commission's orders in these three complaints and remanded for further proceedings on two issues: the *de minimis* threshold exemption and the allocation of costs of projects to address short-circuit reliability issues.[6] In response, on March 6, 2026, the Commission issued the Order on Remand in which it, as relevant here, found that additional record evidence was needed to determine whether the existing solution-based DFAX method that allocates the costs of transmission projects addressing

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[2] *Consol. Edison Co. of N.Y., Inc.*, Complaint of Consolidated Edison Company of New York, Inc., Docket No. EL15-18-000, at 30-35 (Nov. 10, 2014) ("ConEd Complaint"); *Linden VFT, LLC*, Complaint and Request for Fast Track Processing of Linden VFT, LLC, Inc., Docket No. EL15-67-000, at 32-34 (May 22, 2015) ("Linden Complaint"); *Linden VFT, LLC*, Complaint and Request for Fast Track Processing of Linden VFT, LLC, Docket No. EL17-68-000, at 1 (Apr. 28, 2017) ("Second Linden Complaint").

[3] *Consol. Edison Co. of N. Y., Inc. v. PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,227 (2015), *reh'g denied*, 155 FERC ¶ 61,088 (2016), *vacated in part and remanded in part sub nom.*, *Consol. Edison Co. of N.Y., Inc. v. FERC*, 45 F.4th 265 (D.C. Cir. 2022).

[4] *Linden VFT, LLC v. PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,089 (2016) ("Linden Complaint Order"), *reh'g denied*, 170 FERC ¶ 61,122 (2020), *vacated in part and remanded in part sub nom.*, *Consol. Edison Co. of N.Y., Inc. v. FERC*, 45 F.4th 265 (D.C. Cir. 2022).

[5] *Linden VFT, LLC v. PJM Interconnection, L.L.C.*, 170 FERC ¶ 61,123, *reh'g denied*, 172 FERC ¶ 61,176 (2020), *vacated in part and remanded in part sub nom.*, *Consol. Edison Co. of N.Y., Inc. v. FERC*, 45 F.4th 265 (D.C. Cir. 2022).

[6] *Consol. Edison Co. of N.Y., Inc.*, 45 F.4th at 290. In the Order on Remand, the Commission set for paper hearing procedures the method for allocation of costs of projects resolving short-circuit reliability violations. Order on Remand, 194 FERC ¶ 61,179, at PP 72-76.

short-circuit reliability issues is unjust and unreasonable and, if so, what replacement rate should apply.[7] The Commission therefore established paper hearing procedures to further develop the record on this issue.[8]

In the Order on Remand, the Commission presented several requests for information to gather this additional record evidence. Specifically, the Commission asked the parties to address whether there are differences between transmission projects that address stability violations and short-circuit violations and whether those differences make the solution-based DFAX method appropriate to allocate some or all of the costs of transmission facilities selected in the Regional Transmission Expansion Plan[9] to address short-circuit violations.[10] PJM addresses these issues below.

II. RESPONSE TO PAPER HEARING

As detailed below, the current cost allocation methodology for short-circuit reliability solutions is just and reasonable, and the stability deviation method used to allocate costs of stability-related reliability solutions is not appropriate for allocating costs of short-circuit reliability solutions.

[7] Order on Remand, 194 FERC ¶ 61,179, at P 72.

[8] Order on Remand, 194 FERC ¶ 61,179, at P 72.

[9] All capitalized terms that are not otherwise defined herein have the meaning as set forth in the PJM Open Access Transmission Tariff ("Tariff").

[10] Order on Remand, 194 FERC ¶ 61,179, at P 74.

A. The Solution-Based DFAX Method Reasonably Identifies the Beneficiaries of Transmission Facilities Addressing Short-Circuit Reliability Violations.

The primary purpose of any cost allocation approach is to ensure that parties' cost responsibility is "at least roughly commensurate" with the benefits they receive.[11] The solution-based DFAX approach accomplishes this objective for allocating costs of solutions to short-circuit violations.[12]

The solution-based DFAX method is a "beneficiary pays" approach to allocating cost looking at who benefits from the solution as opposed to who caused the violation and caused the costs to be incurred.[13] The solution-based DFAX method evaluates the projected relative use on the new facility by the load of each transmission zone or merchant transmission facility and allocates costs based on such usage. PJM calculates distribution factors, which represent a measure of the relative use of the specific transmission facility by the load of each transmission zone or merchant transmission facility, as determined by a power flow analysis.[14]

With respect to short-circuit violations, the Commission has recognized that this approach is appropriate because, while the underlying reliability issue may not be flow-based, "the evolving use of the facility is well represented by the solution-based DFAX

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[11] *Ill. Com. Comm'n v. FERC*, 576 F.3d 470, 477 (7th Cir. 2009).

[12] The Tariff directs PJM to allocate costs for transmission upgrades needed to address short-circuit reliability violations by upgrade type. For Regional Facilities or Necessary Lower Voltage Facilities, costs are allocated pursuant to a hybrid methodology where (1) 50% of the costs are assigned on a region-wide postage stamp basis, referred to as load-ratio share, and (2) 50% are assigned to specifically-identified beneficiaries using solution-based DFAX method where the solution is a Reliability Project. *See* Tariff, Schedule 12, section (b)(i)(A). For Lower Voltage Facilities, costs generally are allocated 100% by solution-based DFAX. *See* Tariff, Schedule 12, section (b)(ii)(A).

[13] Linden Complaint Order, 155 FERC ¶ 61,089, at P 55 ("The solution-based DFAX method focuses on the benefits of the facility as measured through use of the facility over time rather than the immediate reliability violation that drove the need for the project.").

[14] *See* Tariff, Schedule 12, section (b)(iii).

method."[15] To capture change in usage—and change in benefits—PJM annually updates the cost responsibility assignments.[16] Thus, "[e]ven if a new member was not using the system when a particular project was planned or authorized, the new member may nevertheless use and benefit from the new facility in the future."[17] As such, the solution-based DFAX method allows PJM to apply cost responsibility assignments that are roughly commensurate with the benefits as they evolve over time.

B. Short-Circuit Violations Generally Lack Readily Identifiable Drivers, Making a Beneficiary Pays Cost Allocation Approach Appropriate.

The solution-based DFAX beneficiary pays approach is well suited to assigning cost responsibility for solutions to short-circuit violations because short-circuit violations generally lack readily identifiable drivers. As the record in these dockets demonstrates, for most short-circuit-based reliability transmission solutions, it can be challenging, if not impossible, to point to specific causes as the primary drivers of the solution to a transmission violation.[18] This is because the drivers are cumulative in nature, representing the added impacts of all short-circuit-level increases throughout the system. During a fault event, short-circuit fault current travels through the transmission system from all sources of current, with generation being a major component. Additional transmission network

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[15] Linden Complaint Order, 155 FERC ¶ 61,089, at P 55.

[16] PJM updates the solution-based DFAX analysis and cost responsibility assignments annually beginning with the calendar year in which the new facility is scheduled to enter service in order to take into account changes in the relevant use of the facility due to modifications of the grid, including new transmission facilities, generation additions and retirements, and the growth and distribution of load. *See* Tariff, Schedule 12, section (b)(iii)(H)(2).

[17] *Am. Transmission Sys., Inc. v. PJM Interconnection, L.L.C.*, 140 FERC ¶ 61,226, at P 26 (2012) (citing *Midwest Indep. Transmission Sys. Operator, Inc.*, 129 FERC ¶ 61,060, at P 53 (2009); *Pub. Serv. Co. of Colo.*, 59 FERC ¶ 61,311 (1992)).

[18] *See* Second Revised Transcript of Technical Conference at 10:7-25, 63:10-25, 64:1-5, 78:4-25, 79:1-25, 80:1-25, 81:1-5, *In the Matter of PJM Interconnection, L.L.C.*, Docket Nos. ER15-2562-000, et al. (Feb. 18, 2016).

enhancements that are put in place to enable generation to reliably serve load further increase the fault current on the system. These short-circuit upgrades facilitate the delivery of generation to load, which is a benefit inherently captured through the solution-based DFAX method.

Given that short-circuit violations result from such natural expansions of the transmission system built out to deliver generation to load, identifying specific drivers and allocating costs in a manner roughly commensurate with that driver's responsibility toward the violation would be extremely difficult, if not impossible. As a result, a flow-based allocation approach that assigns costs based on usage over time provides a means to more appropriately match costs with benefits obtained as compared to an approach focusing on drivers and those who contributed to the need for a project.

C. The Record Supports Continued Use of the Solution-Based DFAX Method for Short-Circuit Projects.

As discussed in the Order on Remand, "the court found that the Commission failed to explain why the solution-based DFAX method should be used to allocate the costs of the Bergen-Linden Corridor Project and the Sewaren Project, which addressed short-circuit violations, but not the Artificial Island Project, which addressed stability violations."[19] However, as observed by the Commission, the court *did not* find that applying the solution-based DFAX method to projects needed to address short-circuit issues violated cost causation *per se*. Rather, the court held that "FERC may be able to provide a more satisfactory explanation of the distinction between stability related projects and those that address short-circuit issues and to articulate why DFAX cost allocations are appropriate

[19] Order on Remand, 194 FERC ¶ 61,179, at P 69 (citing *Consol. Edison Co. of N.Y., Inc.*, 45 F.4th at 280-81).

for the latter but not the former."[20] In short, the court did not find error in the Commission's findings, but in the Commission's articulation of its decision-making. Therefore, the short-circuit-related factual findings made by the Commission earlier in these proceedings remain untouched, and support continued application of the solution-based DFAX method.

The Commission has found with respect to the Bergen-Linden Corridor Project and Sewaren Project short-circuit solution, "the solution-based DFAX method identifies benefits associated with the use of transmission facilities over time" and "the initial nature of the problem may not necessarily be related or entirely related to flows, but over time, the evolving use of the facility is well represented by the solution-based DFAX method."[21] And, importantly for purposes of cost allocation, the beneficiaries are readily identifiable. In sum, "[t]he ability to reflect changing system conditions and use over time, and thus the changing beneficiaries of a transmission facility, is one of the primary benefits of the solution-based DFAX method, along with the elimination of the necessity of analyzing each violation and driver of a project separately."[22]

Commission precedent regarding the application of the solution-based DFAX method for the allocation of costs of projects addressing short-circuit-based reliability violations also supports the conclusion that the solution-based DFAX method provides outcomes that appropriately align with cost causation and beneficiary pays principles. The cost causation principle requires that costs be allocated "at least roughly commensurate" with the benefits.[23] This means that "all approved rates reflect to some degree the costs

[20] Order on Remand, 194 FERC ¶ 61,179, at P 71 (quoting *Consol. Edison Co. of N.Y., Inc.*, 45 F.4th at 281).

[21] Linden Complaint Order, 155 FERC ¶ 61,089, at P 55.

[22] Linden Complaint Order, 155 FERC ¶ 61,089, at P 57.

[23] *Ill. Com. Comm'n v. FERC*, 576 F.3d at 477.

actually caused by the customer who must pay them."[24] To the extent an entity causes the costs to be incurred, it will have to pay its share. Over time, the Courts have recognized that a "logical extension" of this principle is the "beneficiary pays" principle where the focus is not on who caused the costs, but rather on those who benefit from the project. [25] If an entity benefits from a project, it will have to pay its share. In sum, "[t]o the extent that a utility benefits from the costs of new facilities, it may be said to have 'caused' a part of those costs to be incurred, as without the expectation of its contributions the facilities might not have been built, or might have been delayed."[26]

Thus, the record and Commission precedent support the conclusion that the solution-based DFAX method is just and reasonable for allocation of the costs of transmission projects to resolve short-circuit reliability issues given the evolving nature of the transmission system and the ability of the solution-based DFAX method to continually account for ever-changing beneficiaries and allocate costs accordingly.

D. Stability Projects Present Different Characteristics that Support a Different Allocation Methodology

The solution-based DFAX method for allocating costs for transmission projects addressing short-circuit-based reliability violations is appropriately different from the stability deviation method used to allocate costs for transmission projects addressing stability-related violations. This is due to different characteristics of each type of reliability violation that therefore warrants a different cost allocation methodology.

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[24] *K N Energy, Inc. v. FERC*, 968 F.2d 1295, 1300 (D.C. Cir. 1992).

[25] *S.C. Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 85 (D.C. Cir. 2014).

[26] *Ill. Com. Comm'n v. FERC*, 576 F.3d at 476.

The primary difference between short-circuit based violations and stability-based violations is that stability violations have identifiable drivers—generation facilities injecting energy onto the transmission system. Stability violations are typically associated with a performance problem with a specific generating facility, leading to a system disturbance. For example, a generating unit could fail to maintain frequency synchronization with the transmission system while all other reliability parameters on the system (e.g., thermal, voltage, and short-circuit fault current) remain within reliable limits. Generally, the stability of a generating facility is inversely related to the power that it is producing at that moment to serve system demand. When a generator becomes unstable, it can trip offline, resulting in an additional system disturbance, and then cause other generators to do the same. Thus, transmission upgrades addressing stability-based violations represent localized solutions providing an outlet for specific generators and associated system-wide stability-related benefits.

The stability deviation methodology in Schedule 12 of the Tariff[27] generally applies the "cost responsibility follows cost incurrence" approach to cost allocation. Specifically, it identifies cost causers of solutions addressing stability-related reliability issues by modeling the voltage angle deviations to assess the stability performance of a generator to critical faults, and allocates costs based on a load-weighted angle deviation for each Responsible Zone.[28]

[27] Tariff, Schedule 12, section (b)(xviii).

[28] *Id. See also Del. Pub. Serv. Comm'n v. PJM Interconnection, L.L.C.*, 164 FERC ¶ 61,035, at P 25 (2018), *reh'g denied*, 166 FERC ¶ 61,161 (2019), *petition for review denied sub nom. Pub. Serv. Elec. & Gas Co. v. FERC*, 989 F.3d 10 (D.C. Cir. 2021).

In contrast, as discussed above, short-circuit violations result from incremental additions of resources to serve demand, such as networked transmission capability and generation resources. Thus, identifying specific drivers may be very difficult to impossible, making a cost incurrence allocation approach inappropriate and supporting the notion that a beneficiary pays approach is just and reasonable. Here, the solution-based DFAX method appropriately allocates costs to the beneficiaries—which are identifiable through the flows over the solutions. Further, as new beneficiaries of the solutions emerge, the solution-based DFAX method accurately accounts for this, in alignment with cost causation.

For the reasons stated above, different methodologies for different project types—short-circuit violations versus stability violations—does not render either method unjust or unreasonable. These different characteristics are appropriately considered in their respective methodologies and result in just and reasonable rates for those types of violations.

III. CONCLUSION

PJM asks the Commission to consider these comments as it evaluates whether the application of the solution-based DFAX method to allocate costs associated with transmission upgrades addressing short-circuit-based reliability violations is just and reasonable.

Respectfully submitted,

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June 4, 2026

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C., this 4th day of June 2026.

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