**UNITED STATES OF AMERICA**
**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

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| PJM Interconnection, L.L.C. | ) | Docket No. ER21-278-000 |

# ANSWER, MOTION FOR LEAVE TO ANSWER AND ALTERNATIVE MOTION FOR CONSOLIDATION, OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rules 212 and 213 of the Commission's Rules and Regulations,[1] Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor ("Market Monitor") for PJM Interconnection, L.L.C. ("PJM"),[2] submits this answer to the answer filed December 10, 2020, by PJM, and to the protests and comments submitted by others on November 20, 2020. This proceeding concerns PJM's filing submitted on October 30, 2020 ("October 30th Filing"), proposing revisions to the PJM market rules to apply an Effective Load Carrying Capability ("ELCC") approach for determining the reliability contribution of a MW of capacity from variable (intermittent), limited duration (storage), and combination (hybrid) resources.

The October 30th Filing is simply inadequate and should be rejected. The concept of an ELCC approach should be thoroughly explored, but this will require months of effort in the PJM stakeholder process after the Commission rejects the current filing. The October 30th Filing was filed prematurely, and, if accepted, would become an obstacle to the

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1 18 CFR §§ 385.212 & 385.213 (2020).

2 Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT"), the PJM Operating Agreement ("OA") or the PJM Reliability Assurance Agreement ("RAA").

development of renewable resources and the continued evolution of PJM's market design by locking in reliability contribution guarantees through 2042.

PJM's filing leads with the argument that its filing is intended to be held only to a weak standard. PJM reminds us that, as a result, any attempts to get the best market design are misguided. Rather than attempting to assert that its proposal is the best way to address the issues, PJM's response focuses on the fact that it must meet only the relatively weak Section 205 standard. The goal should be to develop the best possible approach, not to reduce the burden to support an approach that is not ready.

The October 30th Filing does not meet even the lower burden under Section 205 to show that the proposal is just and reasonable and therefore the October 30th Filing should be rejected. Such rejection would be without prejudice to PJM filing a future proposal that reasonably defines the capacity contribution of all resource types.

If the October 30th Filing is not rejected, then it should be consolidated with the investigation and paper hearing in Docket No. EL19-100. The ELCC proposal falls squarely within the scope of that proceeding. Including the ELCC proposal in Docket No. EL19-100 would allow the Commission to identify and approve the best solution for PJM in both the short and long term. Accordingly, if the October 30th Filing is not rejected, the Market Monitor moves for consolidation of this proceeding with Docket No. EL19-100, subject to the Section 206 review standard.

## I. ANSWER

### A. The ELCC Proposal Should Be Rejected.

PJM emphasizes its filing rights under Section 205 and fails to defend the merits of its proposal. PJM's approach is not a just and reasonable approach to address the identified issues. PJM's proposed approach to ELCC will not provide a just and reasonable measure of

the reliability contributions of different capacity resource types.[3] PJM's approach supports the interest of incumbents against new entrants, would impede the development of new renewable resources and would impose investors' costs and risks on customers.

PJM has not met its burden under Section 205 to show that its proposal is just and reasonable, and PJM fails to address the identified flaws. The October 30th Filing should be rejected. If the October 30th Filing is rejected, the Commission can proceed with its investigation under Section 206 in Docket No. EL19-100.

The Commission should require PJM to implement its prior filing on the treatment of storage resources and to take the time necessary to explore in detail all elements of an alternative approach which would be filed under Section 206.

### B. If the ELCC Proposal Is Not Rejected, the ELCC Proposal Should Be Evaluated Only within the Scope of the Section 206 Investigation in Docket EL19-100.

The October 30th Filing comes as a result of an investigation in Docket No. EL19-100 "regarding the justness and reasonableness of PJM's minimum run-time requirements as applied to Capacity Storage Resources."[4] The paper hearing has been held in abeyance in that docket at the request of PJM to accommodate the October 30th Filing, and the investigation and this proceeding are linked. The proceedings are linked by PJM's motion for abeyance of the investigation while it develops the ELCC proposal, and PJM's proposal should not be evaluated separately from the investigation. If the October 30th Filing is not rejected, then the Commission should consolidate the proceedings and consider PJM's proposal only as a part of the Commission's Section 206 proceeding.

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[3] Comments and Motions of the Independent Market Monitor for PJM, Docket No. ER21-278-000 (November 20, 2020) ("Market Monitor Comments").

[4] *PJM Interconnection, L.L.C.*, 171 FERC ¶ 61,015 at P 138.

PJM's approach unnecessarily constrains the Commission's options. There is no reason to rush to implement a flawed and incomplete proposal, and no reason to avoid consideration of better options.

The best course is to reject the October 30th Filing, resume the investigation, and decide the outcome in the Commission's Section 206 proceeding. This would permit the required in depth review of the ELCC options including a full explanation of the data and model and the lock in floors.

If the October 30th Filing is not rejected, then further consideration should occur within the framework of the existing investigation. Consolidation of the October 30th Filing with the investigation EL19-100 would allow the Commission to evaluate the ELCC approach solely on its merits, order any revisions to the approach that the Commission deems are needed, and consider the relative merits of other approaches. If the October 30th Filing is not rejected, the Market Monitor moves for consolidation of this proceeding with Docket No. EL19-100, subject to the Section 206 review standard.

### C. The Market Monitor Has Identified the Fundamental Flaws in the PJM Proposal That Make the Proposal Unjust and Unreasonable.

The Market Monitor identified three issues with the PJM ELCC proposal.[5] Any one of these issues in isolation means that the PJM ELCC is not just and reasonable and should be rejected. Taken together the three issues mean that the PJM ELCC proposal is fundamentally flawed, not just and reasonable and should be rejected. The issues are: PJM's ELCC values for resource types are not based on facts or a model that has been tested or verified as reasonable; PJM would lock in those unsupported values for 19 years, distorting incentives and markets; and PJM would impose those static, predefined ELCC values rather than recognizing that ELCC values vary within the dynamic market clearing process and

[5] Market Monitor Comments at 8.

permitting the clearing of the capacity market to define the optimal value and mix of resources.[6] [7]

PJM does not have the data or the model to define ELCC values, let alone ELCC values that will be locked in for 13 years for each year. PJM does not address the Market Monitor's comments (at 10) regarding the PJM model's reliance on putative (imagined; postulated; hypothetical) data and the inadequacies of its model including the failure of the model to adequately capture the interdependence of ELCC resources.[8] PJM admits that the model which will be the basis for the locked in ELCC values and which will have a significant impact on the capacity market for up to 19 years has not been validated, implemented or checked for accuracy.[9] These admissions are despite the fact that PJM posted very specific numbers for the floors by technology type on multiple occasions.

In reference to the Market Monitor's criticism of locking in unsupported ELCC values for 13 years (PJM calls it the transition mechanism), PJM states (at 11) that "contrary to the IMM, reliability risk is not shifted to load," and (at 10) "the IMM claim that [the transition mechanism] will shift risks from generation sellers to customers" is without

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[6] Each ELCC resource will be given a 13 year ELCC floor based on the resource's ELCC class and its first delivery year. See October 30th Filing, Attachment A, proposed RAA Schedule 9.1 § J(1).

[7] The PJM Proposal requests that the new ELCC rules be applicable starting with the 2023/2024 Delivery Year and the RAA revisions call for a review of the ELCC floor rules by the end of 2026. By the end of the review the 2029/2030 RPM BRA will be complete. Capacity values for new resources that cleared in the 2029/2030 RPM BRA will be subject to ELCC floors for 13 years, through the 2041/2042 Delivery Year. If approved the proposed ELCC rules would be in place for delivery years 2023/2024 through 2041/2042 or 19 years.

[8] Market Monitor Comments at 9–10.

[9] October 30 Filing at 4 ("Accordingly, PJM requires sufficient time (five to six months) from Commission approval to audit, validate, implement, and check the accuracy of the model for the accepted approach before PJM can provide ELCC outputs assessing resources' reliability values in a timeframe consistent with the pre-auction activities for the 2023/2024 Base Residual Auction.").

merit.[10] But PJM provides no evidence or logic to support its simple assertions. PJM has ignored the actual dynamics that result from the long term lock in throughout the stakeholder process and continues to ignore them in its filing.

PJM states that binding ELCC floors will result in what PJM calls "a reallocation of the ELCC Portfolio UCAP among ELCC Resources"[11] It is generally recognized (throughout the U.S.) that the increased penetration of renewables will result and does result in lower ELCC values. When old resources have locked in ELCC floors and actual ELCC values fall, this means that the old resources will be credited with reliability value that exceeds their actual reliability value. This difference creates a shortfall in reliability that must be made up by other resources. This process of requiring other resources to make up the shortfall is called, in the euphemistic spirit of the PJM Proposal, a reallocation. This reallocation means that in order to honor binding ELCC floor values, the ELCC values for new renewable resources must be reduced below the resources' actual reliability contribution.[12] PJM acknowledges that this process shifts risk away from the favored, incumbent ELCC resources with locked in floors to new renewable resources, but PJM maintains that "reliability risk is not shifted to load."[13] PJM's argument is incorrect. Customers will be forced to pay more for capacity than they otherwise would without the floor mechanism. PJM, completely ignoring the impact on capacity prices, appears to be arguing that there is no risk to load since load will still be able to purchase enough capacity to maintain reliability. But the renewable resources that are assigned a capacity value that is less than their actual reliability contribution will have to offer their capacity at a higher price. For

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[10] Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C., Docket No. ER21-278-000 (December 4, 2020) ("PJM Answer").

[11] PJM Answer at 11.

[12] The Market Monitor Comments (at Tables 3 and 4) included an example of this reallocation.

[13] PJM Answer at 11.

example, Table 1 shows the capacity market offers for a renewable resource that has been assigned a reliability contribution (capacity value) that is less than its true capability. The new renewable resource has an ICAP or nameplate value of 100 MW and the owner has a capacity market revenue requirement of $2,000 per day. The resource's actual reliability contribution is 15.0 percent or 15 MW prior to any adjustment to compensate for binding floors. Without any adjustment for binding floors, the resource's offer for UCAP would be $133.33 per MW-day.[14] To compensate for other resources with a binding floor, the resource's ELCC value is reduced from 15 percent to 12 percent. To maintain the required capacity market revenue, the resource owner must raise its offer for UCAP to $167.67 per MW-day.[15]

**Table 1 Impact of binding floors on capacity market offers for compensating resources**

| | Capacity Market Offer Derivation |
|---|---|
| ICAP (MW) | 100.0 |
| Minimum Acceptable Capacity Revenue ($ per day) | $2,000.00 |
| Capacity Market Offer ($ per ICAP MW-day) | $20.00 |
| ELCC value prior to binding floor adjustment | 15.0% |
| Capacity Market Offer ($ per UCAP MW-day) | $133.33 |
| ELCC value after adjustment to compensate for binding floor | 12.0% |
| Capacity Market Offer $ per UCAP MW-day | $166.67 |

Customers will have to pay a higher price for capacity from new renewable resources that are forced to reduce their reliability contribution due to PJM's "reallocation." PJM's reallocation is unambiguously a direct shifting of risk to new renewable resources and to customers. Given that ELCC values will decline over time, the PJM lock in of fixed ELCC floors for incumbent renewable generators discriminates against new renewable ELCC

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[14] Resource UCAP offer = ($2,000 per day) / 15 MW = $133.33 where UCAP MW = 100.0 MW x 15.0% = 15 MW.

[15] Resource UCAP offer = ($2,000 per day) / 12 MW = $167.67 where UCAP MW = 100.0 MW x 12.0% = 12 MW.

resources, and erodes incentives for innovation. This outcome is in direct conflict with the goals of competitive markets.

PJM still has not acknowledged that there may not be sufficient ELCC resources to accommodate the shortfall in capacity that results from the overstatement of binding ELCC floors. When floors are binding for the existing ELCC resources, and actual ELCC values fall below the floors, there will be a shortfall of capacity that can only be made up by requiring load to pay for more thermal resources.[16] PJM fails to recognize this outcome and fails to specify a remedy in the RAA. The only remedy to this outcome is that load will be forced to purchase additional capacity from thermal generators. This is another cause of higher payments by load.

PJM also fails to address the fact that the PJM Proposal will not let the market define the optimal quantities and prices for renewable resources. PJM uses predefined ELCC values defined independent of and prior to the PJM capacity auctions, and uses average ELCC rather than marginal ELCC. PJM fails to recognize that the capacity values established by the PJM ELCC approach will be wrong. The PJM ELCC values will be calculated using an arbitrary and fixed resource mix established six to seven months prior to the capacity auction. The PJM ELCC values will be calculated using an average ELCC approach rather than a marginal ELCC approach. PJM's ELCC approach is not based on competitive market economics but is an ad hoc method. Any argument for the PJM ELCC approach should explain why the nonmarket approach is preferable to the market approach. PJM did not offer an explanation.

PJM contends that the Market Monitor's approach would "require a reconfiguration of many aspects of the capacity market."[17] Apparently PJM is asserting that the radical

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[16] Tables 3 and 4 in the Market Monitor Comments (at 17) show how the floors on the compensating resource group affect the reallocation.

[17] *Id*. at 13.

changes it proposes to the capacity market would not require changes. But that is clearly incorrect on its face. Implementation of an ELCC proposal will require changes to many aspects of the capacity market, regardless of whether it is done incorrectly or correctly. PJM's proposal to implement their ELCC proposal in a clearly incorrect and inefficient manner is much more likely to require significant changes in the future to fix the problems it creates. It would be more efficient to take the time to address the serious design flaws now rather than forcing market participants to bear the price of locking in a bad design for 19 years.

**D. Locking in Fixed ELCC Values for 19 Years is not Consistent with Markets.**

The euphemistically named transition mechanism provides a lock in of unsupported ELCC values to existing resources in an explicit shifting of risk to new entrants and customers. Risk does not disappear. But risk can be assigned to others. That is the approach taken in the PJM Proposal.

The Joint Stakeholders argue (at 5) that the Commission "regularly approves phased implementation strategies to allow market participants an opportunity to acclimate to new or previously untested regulatory structures." The locked in arbitrary floors are not a transition mechanism and do not serve the purpose of transition mechanisms that the Commission has approved. Those transition mechanisms generally applied to all market participants and did not favor one small subset of market participants for up to 19 years. The locked in floors single out a small group of incumbent generators for long term special treatment at the direct expense of new entrants and customers and with no defined end date. PJM's proposal is not consistent with FERC precedent; it is a radical break from FERC precedent in establishing changes to the market design.

Locking in unsupported ELCC values for 13 years for the new resources each year is not a transition mechanism and it is not a phased implementation strategy. An actual transition mechanism would be based on thorough simulations which would provide participants with a view of expected changes in ELCC values and prices as renewable

development proceeds. Market participants could enter the market fully aware of the risks that markets entail. This is the standard approach that PJM has always taken.

The Joint Stakeholder claim (at 5) that the purpose of locking in the unsupported ELCC values in the PJM Proposal is to provide "safeguards against unknown or unexpected risks to market participants." The floors do not eliminate risks or provide safeguards against risks. The floors simply shift risks from the preferred group of investors to other market participants. The explicitly stated goal is to protect only a specific subgroup of market participants, investors in existing technologies, from risks by transferring the risks to new entrants and to customers. The Joint Stakeholders stated this repeatedly and explicitly throughout the stakeholder process as if it were a good thing and a desirable goal of market design. Competitive markets shift risks from customers to investors.[18] Competitive markets should not be designed to favor incumbent investors over new entrants and over customers.

PJM's proposed ELCC floors are designed to favor and protect current near term projects from potential competition from future, more technically advanced projects. The proposed ELCC floors do not allow a transition to entry by innovative new renewable technologies. Rather, the floors interfere with competition in the capacity market, undermine innovation and distort market signals in favor of incumbent resources for as long as19 years. PJM's proposed transition mechanism should be rejected.

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[18] *See* Joint Stakeholder Package presentation of August 7, 2020 <*https://www.pjm.com/-/media/committees-groups/task-forces/ccstf/2020/20200807/20200807-item-06b-joint-elcc-stakeholder-presentation.ashx*>; Joint Stakeholder Presentation of August 12, 2020 <*https://www.pjm.com/-/media/committees-groups/task-forces/ccstf/2020/20200812/20200812-item-06b-joint-stakeholder-package.ashx*> .

### E. The PJM Proposal Will Slow the Introduction of Innovative Renewable Technologies

The Joint Consumer Advocates argue (at 7) that the PJM Proposal will provide a means "for states and jurisdictions to help meet their clean energy and de-carbonization goals in a market based paradigm that ensures resource adequacy." But the Joint Consumer Advocates provide no evidence to support their hopes and do not address whether the PJM Proposal will reduce costs to customers.

Despite the admirable goal, Joint Consumer Advocates also make the argument (at 5-6) that PJM's proposal should be approved solely because it passes the weak Section 205 test. The PJM Proposal is clearly not the right way to implement ELCC but it is also clearly not even acceptable under the weak Section 205 standard.

PJM's Proposal, for example, results in an inflated ELCC value for batteries. Under PJM's extreme modeling assumptions, the output of limited duration storage (batteries) is only used only in the specific high load hours when the total output from all other economic resources cannot meet load.[19] PJM notes that this behavioral assumption used for storage resources is designed to maximize the ELCC values of batteries.[20] There is no basis for PJM's extreme behavioral assumptions. These behavioral assumptions are not based on any actual observed behavior by short duration batteries on the PJM system. Further, there are no market rules or market incentives that would cause the profit maximizing owners of short duration storage to behave in the way that PJM asserts. PJM effectively assumes that batteries are reliable as an input to the model and then asserts that the reliability of batteries is an output of the model. The implausible result is that PJM asserts that a four hour battery

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[19] *See* PJM October 30th Filing at 30.

[20] *Id*. ("Dr. Rocha Garrido explains that this principle 'recognizes that to take advantage of the flexibility provided by Limited Duration Resources and Combination Resources, and thus maximize their reliability benefit to the PJM system, it is essential to dispatch these resources after Unlimited Resources and Variable Resources.'").

is the approximate equivalent of a new, efficient gas fired combined cycle plant in providing reliability.[21] PJM never defends that conclusion.

PJM's behavioral assumption for storage, by artificially inflating the value of batteries relative to all other resource types, results in a devaluation of renewable resources, including wind, solar and hydro resources, in the capacity market. The PJM Proposal would lock in these inflated ELCC values for storage, regardless of what actually happens with real batteries. The result will be to undervalue the reliability contributions of wind and solar. Rather than permitting the competitive market to work and provide incentives based on observable contributions to reliability, the PJM Proposal would distort the market based on invented data and lock in that distortion for up to 19 years.

### F. The Market Monitor's Concerns are Shared By Other Intervenors

Several intervenors identify the same fundamental concerns raised by the Market Monitor. These intervenors request that the Commission address these concerns, by rejecting the PJM Proposal, or by requiring that PJM provide more clarity as to its basic assumptions; by requiring more time for the stakeholder process to address the identified issues; by giving more time for PJM to develop its proposal; or by eliminating the fixed ELCC floors.

#### 1. LS Power's Filing Confirms the Basic Issues Identified by the Market Monitor.

LS Power states (at 2–3) that while it supports PJM's goal of devising a method that will provide a "more accurate understanding of the reliability contribution of each resource on its system," (at 3) "it is unable to support the ELCC construct as set forth in the October 30th Filing." The LS Power filing is not a limited protest. The LS Power filing is a well

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[21] "Capacity Capability Senior Task Force Presentation," at 15, Melissa Pilong, PJM, (September 17, 2020) <*https://pjm.com/-/media/committees-groups/committees/mrc/2020/20200917/20200917-item-04-1-ccstf-presentation.ashx*>

supported request that the PJM Proposal be rejected. LS Power includes (at 3) many of the same reasons identified by the Market Monitor: there is no analytical basis for the ELCC values; the locked in floors discriminate in favor of existing resources. LS Power points out that the PJM Proposal is incomplete and the proposed ELCC values are suspect due to a lack of operational experience, actual data and an incompletely developed model (at 3, 9–12). LS Power also points out that the ELCC floors are not consistent with a competitive market or a functioning capacity market (at 3–8).

**2. Dominion's Protest Confirms the Basic Issues Identified by the Market Monitor.**

Dominion states (at 1) that it cannot support the PJM Proposal for some of the same reasons being raised by the PJM Market Monitor, specifically (at 4, 4–6) that: the PJM Proposal is incomplete and the proposed ELCC values suspect due to a lack of operational experience, a lack of actual data and an incompletely developed model; that the ELCC floors will have a discriminatory impact; and the ELCC vintage based floors are not consistent with a competitive market or a functioning capacity market. Dominion states (at 4) that the PJM Proposal is not transparent or detailed enough to allow a market seller to reproduce PJM's ELCC values.

**3. PJM Power Providers Group's Comments Confirm the Basic Issues Identified by the Market Monitor.**

Power Providers support (at 2) the intent of ELCC to appropriately recognize the capacity contributions of resources with limited availability. However, Power Providers note (at 2) that PJM's filed proposal "leaves open many issues and fails to provide sufficient information in order to allow stakeholders and the Commission an opportunity to fully evaluate the proposal." In addition, Power Providers state (at 2) "PJM's proposed 10-year floor raises important legal, practical and fairness issues that should be further explored, explained, and perhaps modified before Commission approval of the ELCC construct as a whole."

Power Providers note (at 5) that PJM's filing makes clear that PJM and its independent consultant, Energy+Environmental Economics, are still in the process of reviewing, validating, and testing the ELCC model and inputs and that PJM's design is not final. As a result, Power Providers request that the Commission direct PJM to file further information on the proposed ELCC design before approving PJM's proposal. Power Providers go further (at 9), requesting that the Commission hold the paper hearing in abeyance until PJM has the time to develop a complete and fully understood ELCC design.

## II. MOTION FOR LEAVE TO ANSWER

The Commission's Rules of Practice and Procedure, 18 CFR § 385.213(a)(2), do not permit answers to answers or protests unless otherwise ordered by the decisional authority. The Commission has made exceptions, however, where an answer clarifies the issues or assists in creating a complete record.[22] In this answer, the Market Monitor provides the Commission with information useful to the Commission's decision making process and which provides a more complete record. Accordingly, the Market Monitor respectfully requests that this answer be permitted.

## III. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to this answer and alternative motion as the Commission resolves the issues raised in this proceeding.

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[22] *See, e.g., PJM Interconnection, L.L.C., 119 FERC ¶61,318 at P 36 (2007) (*accepted answer to answer that "provided information that assisted … decision-making process*"); California Independent System Operator Corporation*, 110 FERC ¶ 61,007 (2005) (answer to answer permitted to assist Commission in decision-making process); *New Power Company v. PJM Interconnection, L.L.C.*, 98 FERC ¶ 61,208 (2002) (answer accepted to provide new factual and legal material to assist the Commission in decision-making process); *N.Y. Independent System Operator, Inc.*, 121 FERC ¶61,112 at P 4 (2007) (answer to protest accepted because it provided information that assisted the Commission in its decision-making process).

Respectfully submitted,

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Dated: December 14, 2020

**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 Eagleville, Pennsylvania,
this 14th day of December, 2020.

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