TPA Exhibit No. 17

A-2017-2640195, etal.

2/27/19

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C. : **Docket No. ER19-80-000**

ANSWER OF PJM INTERCONNECTION, L.L.C.
TO COMMENTS OF
INDEPENDENT MARKET MONITOR

Pursuant to Rule 212 and 213 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("Commission"),[1] PJM Interconnection, L.L.C. ("PJM") submits this answer to the comments filed by the Independent Market Monitor ("IMM")[2] in response to PJM's December 21, 2018 answers[3] to the November 27, 2018 information request[4] by the Federal Energy Regulatory Commission ("Commission") in this docket.

As described in PJM's initial transmittal letter submitted in this docket,[5] PJM's proposal to cap the benefit/cost ratio calculation at 15 years beyond the year in which the project is included in the regional transmission expansion plan ("RTEP") (the PJM planning horizon) was intended to address concerns over comparing project proposals with different in-service dates submitted through the same competitive proposal window that satisfied the 1.25 benefit/cost ratio threshold. As noted in the October 10 Filing, if the benefit/cost ratio calculation is not

[1] 18 C.F.R. § 385.212 and .213 (2018).

[2] *PJM Interconnection, L.L.C.*, Comments of the Independent Market Monitor for PJM, Docket No. 19-80-000 (Jan. 11, 2019) ("IMM Comments").

[3] *PJM Interconnection, L.L.C.*, Response to Deficiency Notice, Docket No. ER19-80-001 (Dec. 21, 2018) ("December 21 Response").

[4] *PJM Interconnection, L.L.C.*, Deficiency Letter, Docket No. ER19-80-000 (Nov. 27, 2018) ("November 27 Deficiency Letter").

[5] *PJM Interconnection, L.L.C.*, Revisions to PJM Operating Agreement, Schedule 6, Section 1.5.7, Docket No. ER19-80-000 (Oct. 10, 2018) ("October 10 Filing").

capped at 15 years, projects with later in-service dates are evaluated using *ad hoc* projections for the "out years" (years beyond the PJM's 15-year planning period) that are based on speculative benefit estimates that are far more risky than the forecasts relied on for the 15-year planning horizon.[6]

I. INTRODUCTION

The objective of PJM's market efficiency planning process is to identify market efficiency projects that result in economic benefits based on the calculation of future benefits. However, the calculation of future benefits is inherently imprecise because future market conditions cannot be known with certainty and future market models must rely on many assumed variables. PJM plans its system over a 15-year planning horizon. As part of its market efficiency analysis, PJM performs market simulations and produces benefit/cost analyses of projects specifically targeted for economic efficiency. Annual benefits are based on PROMOD simulations that are interpolated between multiple simulation years and extrapolated for years after 15 years out. Benefits that are extrapolated beyond 15 years out are particularly speculative because they may be beyond the PJM RTEP 15-year planning period.

Under the current economic planning process, PJM calculates the market efficiency benefit/cost ratio as the project's in-service date plus 14 years. The net present value ("NPV") of annual benefits is calculated for the first 15 years of a project's life. The NPV is compared to the NPV of the project's revenue requirement for the same 15-year period to determine if the project is cost beneficial. Consistent with Schedule 6, section 1.5.7, if the ratio of the NPV benefits to the NPV costs exceeds 1.25, the project may be recommended for inclusion in the PJM RTEP.

[6] October 10 Filing at 2.

The planning of market efficiency projects that result in economic benefits based on the calculation of future benefits is not a perfect science. Nor can it be. The results are based on forecasted data and the further out the forecast, the less reliable the results.

Despite this fact, in its comments, the IMM uses this docket to challenge PJM's design of the market efficiency process and recommends that the Commission reevaluate the rules governing the benefit/cost analysis. Specifically, the IMM notes that the market efficiency process as designed unfairly advantages transmission (under cost of service) over generation (which is entirely based on market prices and the associated risks), stating that:

> The inclusion of market efficiency projects in the transmission planning process, in addition to reliability projects, results in direct competition between generation and transmission to address congestion issues in the wholesale power market, including congestion in the energy and capacity markets. But PJM fails to explicitly address this fact either in this filing or in the design of the market efficiency process.[7]

The IMM recommends that "the role of the market efficiency process and its impact on competition should also be more thoroughly evaluated" by the Commission.[8]

The IMM's recommendation is beyond the scope of this docket and the tasks of the Market Efficiency Process Enhancement Task Force ("MEPETF"). PJM, together with its stakeholders, convened the MEPETF to review, evaluate and recommend specific improvements to the market efficiency process. The revisions proposed in the October 10 Filing are intended to address the necessary improvements as approved by the PJM stakeholders that will ensure that the proper benefits of a market efficiency proposal are captured in the evaluation process. The changes proposed in this docket to

[7] IMM Comments at 7.

[8] *Id.*

Schedule 6, section 1.5.7 were overwhelmingly approved by the PJM stakeholders;[9] and the IMM's recommendations were not even discussed in the PJM stakeholder process because they were not identified as a problem during the development of the MEPETF charter.

Thus, to the extent the Commission is inclined to explore the IMM's concerns relative to the role of the market efficiency planning process and its impact on "competition between generation and transmission to address congestion issues in the wholesale power market,"[10] PJM urges the Commission to direct the IMM to do so through the normal PJM stakeholder process by initiation of a problem statement. Circumventing the PJM stakeholder process, as the IMM is recommending, should not be allowed.

II. ANSWER

A. The IMM Assumptions as to Why this Proposal Does Not Level the Playing Field are Incorrect

In its comments, the IMM argues that PJM's proposal does not generate a level playing field for comparing project proposals with different in-service dates. In support of its argument, the IMM makes some incorrect assumptions.

First, PJM's proposal does not "*arbitrarily* truncate the evaluation period for projects with later start dates."[11] Rather, PJM's proposal seeks to limit the period in which it evaluates benefits and costs to its 15-year planning period that aligns with PJM's long-term reliability planning analysis, rather than continue to allow projects to use *ad hoc* projections for the out

[9] *See* October 10 Filing at 5 (The proposed revisions were presented to and endorsed by the Markets and Reliability Committee on August 23, 2018 by acclamation with one abstention and one objection; and approved by the Members Committee on September 27, 2018 in a sector-weighted vote with 4.41 in favor.

[10] IMM Comment at 7.

[11] *Id.* at 3.

years (years beyond the 15-year planning period) that are based on a trend line without regard to any other analysis that might affect the transmission system. Additionally, alignment of the evaluation period for market efficiency projects to the length of time associated with the long-term reliability evaluations allows PJM to incorporate evaluation of longer lead transmission construction activities associated with those reliability evaluations into the evaluation of the market efficiency projects as may be needed.

There are several ways PJM could have tried to levelize the evaluation of project proposals with different in-service dates. However, because economic benefits are based on the calculation of unknown, future benefits that are inherently uncertain, all efforts to levelize the evaluation of project proposals would have pros and cons. For example, the IMM proposes in its comments that instead of accepting PJM's proposal to cap the number of years over which a project's annual benefits and revenue requirements are considered for the benefit/cost ratio calculation to RTEP year + 14, PJM establish a common end date to evaluate all competing proposals so that the minimum included years for any evaluated project is 15 years.[12] As explained by the IMM, if there were an RTEP year zero project compared to an RTEP year + 2 project, the benefit/cost analysis would include the benefits and costs for both projects for every year from RTEP year zero to RTEP + 16. According to the IMM, under this approach all projects would be evaluated over their actual term rather than an artificially truncated term and all projects would be evaluated on a present value basis at year zero.[13]

However, that is not the proposal endorsed by the stakeholders. Moreover, arguments could be made that such a proposal would disadvantage one of the two projects with different in-service dates because the benefits and costs of an RTEP year zero project would be evaluated

[12] *Id.* 7.

[13] *Id.* at 4.

over a 16 year period while the benefits and costs of an RTEP year + 2 project would be evaluated over a 14 year period. More importantly, such a proposal would still require PJM to consider *ad hoc* projections in the out years based merely on a trend line, which projections increase the risk of using more speculative benefit estimates beyond the 15-year planning period.

Second, the IMM's concludes that if the benefits of a project with a later in-service date are increasing in years beyond RTEP + 14 due to expectations about future congestion costs, "excluding years beyond RTEP + 14 will disadvantage the project because every year past RTEP + 14 would be adding years with increasing benefit to cost ratios."[14] It is true that if the benefits of a project with a later in-service date are increasing beyond the 15-year planning period, capping the evaluation period to the 15-year planning period would deny such a project the ability to take advantage of those additional increased benefits. However, this argument assumes that the data relied upon to show increasing benefit/cost ratios in the out years are comparable to the benefits based on PROMOD simulations for the 15-year planning period. That assumption is incorrect. In fact, unlike the 15-year planning period, the benefits considered outside that period are beyond the PROMOD study year and, therefore, based on a trend line without regard to any other analysis that might affect the transmission system, which is why those benefits are characterized as "speculative" and "risky."

Third, the IMM argues that the proposal does not levelize the playing field for comparing projects with different in-service dates because, by capping the evaluation period, projects with a later in-service date with benefits that decrease over time would be able to eliminate the out years of declining benefits from the analysis for that project. According to the IMM, this scenario would incent the developer to push back in-service dates in order to have an advantage

[14] *Id.* at 3.

over similar projects with earlier in-service dates. However, the IMM's argument misses the fact that if a project with a later in-service date has a decreasing trend line, PJM will factor that information into its sensitivity analysis as a negative for the project in comparing competing project proposals. So, under the PJM proposal there is no ability for a project with a later in-service date and a decreasing trend line to "game" the process. It is also worth noting that PJM validates extrapolation results beyond RTEP + 14 by performing a high-level simulation for the RTEP + 19 year and that validation can also be considered by PJM in its sensitivity analysis.

Even the IMM notes that all projections and forecasts, positive or negative, are speculative.[15] However, limiting the benefit/cost evaluation period to PJM's 15-year planning period at least provides PJM greater certainty as to the projections used to identify economic benefits when selecting among competing projects that is aligned with PJM's 15-year planning period.

B. The IMM's Recommendation that the Rules Governing the Benefit/Cost Analysis be Reevaluated should be Either Investigated by the Commission or Addressed by all Stakeholders in an Open, Transparent Stakeholder Process

In its comments, the IMM suggests that the Commission direct PJM to reevaluate its market efficiency process arguing for a review of (i) the way congestion is measured, (ii) the role of the market efficiency process, and (iii) its impact on competition. The IMM's comments go beyond the improvements contemplated by the MEPETF and would require a wholesale evaluation of the underlying design of PJM's market efficiency planning process. Additionally, their comments are untimely as they essentially represent an entirely different approach than what was agreed to by the stakeholders in the MEPETF and such comments should have been raised in the context of the stakeholder process itself. Regardless, this is not the place to argue

[15] IMM Comments at 4.

for a complete revamping of the market efficiency process. If the IMM believes this reevaluation is necessary, it should propose it in the context of the PJM stakeholder process.

III. CONCLUSION

WHERFORE, PJM respectfully requests that the Commission reject the IMM's recommendations proposed in its comments and accept PJM's proposed revisions submitted in its October 10 Filing as just and reasonable, effective December 10, 2018.

Respectfully submitted,

By: _____

Craig Glazer
Vice President – Federal Government Policy
PJM Interconnection, L.L.C.
1200 G Street, NW, Suite 600
Washington, DC 20005
Ph: (202) 423-4743
Fax: (202) 393-7741
craig.glazer@pjm.com

Pauline Foley
Associate General Counsel
PJM Interconnection, L.L.C.
2750 Monroe Blvd.
Audubon, PA 19403
Ph: (610) 666-8248
Fax: (610) 666-8211
pauline.foley@pjm.com

Counsel for
PJM Interconnection, L.L.C.

Dated: January 28, 2019

CERTIFICATE OF SERVICE

I hereby certify that I have this day directed the service of the foregoing document on those parties on the official Service List compiled by the Secretary in these proceedings.

Dated at Audubon, Pennsylvania this 28th day of January, 2019.

Pauline Foley
Associate General Counsel
PJM Interconnection, L.L.C.
2750 Monroe Blvd.
Audubon, PA 19403
Ph: (610) 666-8248
pauline.foley@pjm.com

TPA Exhibit No. 18

A-2017-2640195, et al.
2/27/19
1 Hag
jav

166 FERC ¶ 61,114
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Cheryl A. LaFleur, Richard Glick,
and Bernard L. McNamee.

PJM Interconnection, L.L.C. — Docket Nos. ER19-80-000, ER19-80-001

ORDER ACCEPTING TARIFF FILING

(Issued February 19, 2019)

1. On October 10, 2018, pursuant to section 205 of the Federal Power Act (FPA),[1] PJM Interconnection, L.L.C. (PJM) filed proposed revisions to the benefit/cost analysis it conducts in its evaluation of economic-based enhancements or expansions as part of its regional transmission expansion plan (RTEP) process, as set forth in Schedule 6 of the Amended and Restated Operating Agreement of PJM (Operating Agreement) (PJM Filing). As discussed below, we accept the proposed revisions, effective December 10, 2018, as requested.

I. Background and the PJM Filing

2. Section 1.5 of Schedule 6 of the Operating Agreement details the procedures for the development of the RTEP.[2] Section 1.5.7 of Schedule 6 provides for the development of economic-based enhancements or expansions.[3] Under its current Operating Agreement, PJM uses a benefit/cost ratio analysis to determine whether an economic enhancement or expansion will be included in the RTEP. The analysis compares the net

[1] 16 U.S.C. § 824d (2012).

[2] PJM Operating Agreement, Schedule 6, Section 1.5 (Procedure for Development of the Regional Transmission Expansion Plan).

[3] PJM Operating Agreement, Schedule 6, Section 1.5 (Development of Economic-based Enhancements or Expansions). This order refers to economic-based enhancements or expansions by the term "market efficiency projects" in order to be consistent with the way PJM and intervenors discuss the proposed projects.

present values (NPV) of the annual benefits[4] and total costs[5] of a proposed market efficiency project for the 15 years following the proposed in-service date. If the ratio of the NPV of benefits to the NPV of costs exceeds 1.25, then the market efficiency project may be recommended for inclusion in the RTEP.

3. PJM states that it conducts system planning over a 15-year planning horizon from the RTEP Year.[6] Under PJM's competitive proposal window process, market efficiency analyses weigh the relative benefits of different project proposals on a going forward basis. PJM states that due to different in-service dates for different project proposals, it is compelled, under its current Operating Agreement, to develop ad hoc projections for the "out years" (beyond PJM's planning horizon) for project proposals with later in-service dates. PJM states that it then compares those ad hoc projections against other project proposals with earlier in-service dates. PJM asserts that having to compare project proposals with different time periods and data has made it difficult to measure the relative benefits of competing project proposals. PJM states that the standardization proposed in the instant filing is intended both to level the playing field on which it evaluates project proposals with different in-service dates and to ensure that the analysis of competing project proposals utilizes data and information that align with PJM's 15-year planning horizon.[7]

4. PJM states that benefit projections become less reliable over time and can be more difficult to predict than project costs. Therefore, PJM argues, limiting the timeframe over which benefits are calculated for market efficiency projects with in-service dates beyond the RTEP Year would address concerns regarding the additional risk of using more speculative benefit estimates for projects with farther out in-service dates. PJM states that it has found that if a project has an ascending benefits trend line, projects with an in-service date beyond the RTEP Year have an advantage compared to projects with an RTEP Year in-service date. PJM asserts that, given the opportunity for greater benefits in the further out years, use of the current timeframe has created a misaligned incentive for project developers to delay their in-service date in order to take advantage of greater benefits. Thus, PJM argues, its proposed revisions will better align the comparability of

---

[4] Benefits are calculated in terms of changes in congestion and production costs.

[5] Costs are calculated to include the total anticipated expenditures required to develop a project, including land acquisition and construction costs, among others. PJM Filing at 2.

[6] The RTEP Year is defined to mean the year in which the project is included in the RTEP plus five. PJM Filing at 2.

[7] PJM Filing at 6-8.

different project proposals by ensuring an "apples-to-apples" comparison of the benefits of competing projects with different in-service dates over a common timeframe.[8] PJM contends that the revisions are also expected to better align incentives toward transmission owners proposing timely in-service dates.[9]

5. PJM proposes to revise the benefit/cost ratio calculation such that it will measure the NPVs of the benefits and costs of the project beginning in the RTEP Year (i.e., the year the project is included in the RTEP plus five years) and will cap the measured benefits and costs at 15 years beyond the RTEP Year. The benefit/cost ratio would be determined as follows:

> [Present value of the Total Annual Enhancement Benefit for the 15 year period starting with the RTEP Year (defined as current year plus five) minus benefits for years when the project is not yet in-service] ÷ [Present value of the Total Enhancement Cost for the same 15 year period][10]

6. Thus, under this proposal, if a proposed market efficiency project has an in-service date that extends beyond the RTEP Year, benefits and costs (i.e., revenue requirements) would be evaluated over the same timeframe used for projects with an in-service date of the RTEP Year, which would be for a shorter period than under the current calculation.

7. PJM asserts that there is no basis to assume that larger projects will be disproportionately excluded from the RTEP under its proposal because: (1) larger, longer lead-time projects tend to be more comprehensive projects that result in larger benefits when compared to smaller, shorter lead-time projects; and (2) longer lead-time projects benefit from a lower denominator in the benefit/cost ratio calculation, as annual revenue requirements are accrued over a shorter period of time, i.e., less than 15 years.[11]

II. Notice of Filing and Responsive Pleadings

8. Notice of the October 10, 2018 Filing was published in the *Federal Register*, 83 Fed. Reg. 52,830 (2018), with interventions or protests due on or before October 31, 2018. Timely motions to intervene were filed by the GridLiance East, LLC, First Energy Service Company, Old Dominion Electric Cooperative, Dominion Energy Services,

---

[8] PJM Filing at 1, 8.

[9] *Id.* at 6-9.

[10] *Id.* at 8 (citing PJM Operating Agreement, Schedule 6, section 1.5.7(d)).

[11] *Id.* at 9.

American Municipal Power, Inc., ITC Mid-Atlantic Development LLC (ITC Mid-Atlantic), LSP Transmission Holdings, LLC, and Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM (IMM). Out-of-time motions to intervene were filed by NextEra Energy Transmission, LLC (NextEra), Exelon Corporation (Exelon), the American Wind Energy Association (AWEA), and Avangrid Networks, Inc. (Avangrid). On February 14, 2019, the IMM filed an answer to PJM's Answer.

9. On October 31, 2018, ITC Mid-Atlantic and NextEra (Joint Protesters) filed a joint protest (Joint Protest). The Joint Protesters argue that PJM's proposed Operating Agreement change is unjust and unreasonable and unduly discriminatory because it would favor smaller, more incremental market efficiency projects.[12] The Joint Protesters assert that, as a result, PJM's proposal would benefit incumbent transmission owners, who are the only entities able to propose small-scale transmission upgrades to their own systems, to the detriment of non-incumbent transmission developers who may only propose greenfield projects (which are often larger-scale projects that require additional construction time), thereby depriving consumers of the benefits of competition.[13]

10. The Joint Protesters argue that PJM's proposed Operating Agreement changes discriminate against projects with later in-service dates in two ways: (1) by subtracting benefits not realized from the RTEP Year until the in-service date from the benefit/cost ratio calculation;[14] and (2) by reducing the total time period over which project benefits and costs are measured.[15] The Joint Protesters assert that the subtraction of benefits is not tied to any actual benefits that a proposed project may deliver, but instead serves as a "punitive measure" that disadvantages projects with in-service dates beyond the RTEP Year.[16] With respect to reducing the time period considered in the benefit/cost ratio calculation, the Joint Protesters conclude that the proposed Operating Agreement change

---

[12] Joint Protest at 1-2.

[13] *Id.*

[14] The Joint Protesters point to the following proposed Operating Agreement language: "Benefit/cost ratio = [Present value of the Total Annual Enhancement Benefit for the 15 year period starting with the RTEP Year (defined as current year plus five) ***minus benefits for years when the project is not yet in-service***] ÷ [Present value of the Total Enhancement Cost for the same 15 year period]." Joint Protest at 3 (emphasis added by Joint Protesters).

[15] Joint Protest at 2.

[16] *Id.* at 3.

is the opposite of an "apples-to-apples" comparison[17] because it would not compare projects over a standard period of time, such as the first 15 years of a project's useful life. The Joint Protesters argue that the overall reduction in total benefits credited to larger, longer lead-time projects will likely reduce their relative chance of selection in the RTEP process.

11. The Joint Protesters also question the rationale offered by PJM for its proposed Operating Agreement change.[18] First, they argue that PJM has failed to demonstrate that developers are consistently submitting delayed in-service dates to "game" the benefits calculation methodology, or that such gaming has impacted the transmission planning process.[19] Second, they assert that "RTEP Year + 15" is an arbitrary and inaccurate cut-off for assessing benefits and costs. The Joint Protesters state that PJM provides no evidence to support its assertion that the drivers of a project's benefits would be more difficult to predict beyond the RTEP Year + 15-year timeframe or that the discount rate would not mitigate any marginal uncertainty. They also argue that PJM's proposal assumes that a project with a later in-service date will have *no benefits* beyond this arbitrarily-selected cutoff year, which penalizes larger greenfield transmission projects.[20] Finally, the Joint Protesters argue that no barrier prevents PJM from comparing benefit/cost ratios developed for different 15-year periods.[21]

III. Deficiency Letter and Responsive Pleadings

12. On November 27, 2018, Commission staff advised PJM that the October 10, 2018 Filing is deficient and that additional information is required to process the filing (Deficiency Letter). The Deficiency Letter sought clarification on a number of issues. These questions relate to the rationale that underlies PJM's proposal, the quantitative changes made to the benefit/cost ratio calculation, and the types of projects typically associated with ascending versus descending benefits trend lines, as well as the

---

[17] Joint Protest at 3-4.

[18] *Id.* at 6.

[19] *Id.* at 7. The Joint Protesters argue that the data submitted by PJM in Appendix I of its filing shows that virtually all projects submitted in that particular window utilized the same in-service year (2021), with a small number of projects proposing an in-service date either one year before or after that year. Further, the Joint Protesters note that none of the projects with the 2022 in-service year were selected in the RTEP.

[20] *Id.* at 9.

[21] *Id.* at 8, 10.

proportion of project proposals that exhibit these characteristics. The Deficiency Letter also sought clarification on how the proposed revisions relate to the studies currently provided for in Schedule 6 that include calculating benefit/cost ratios as part of sensitivity studies, modeling assumption variations, and scenario analyses. Finally, the Deficiency Letter sought clarification of whether the proposed revisions would result in the resolution of PJM's transmission needs with smaller, ad hoc transmission system upgrades rather than larger-scale transmission solutions that address multiple transmission needs and could favor incumbent transmission providers that are capable of developing smaller incremental projects in the competitive proposal window process.

13. On December 21, 2018, PJM filed a response to the Deficiency Letter (Deficiency Response). In its Deficiency Response, PJM explains that the Operating Agreement language proposed in the instant filing is intended to clarify that benefits (and costs) are capped at 15 years beyond the RTEP Year in order to be consistent with the PJM planning period. PJM states that "while the tariff's formulaic approach proposes to 'minus' the benefits for the years the project is not yet in-service, such language is not intending to reduce benefits that actually exist; rather, the reference to 'minus' is used to clarify that PJM will not attribute benefits to the project during the years it is not in service."[22] PJM also explains how use of the current timeframe has created a misaligned incentive for project developers to delay their in-service dates.[23] PJM further clarifies that future year assumptions may either over- or under-estimate the benefits of proposed projects. PJM also explains that the proposed Operating Agreement changes are necessary to achieve an "apples-to-apples" comparison of proposed projects because PJM's current market efficiency planning process does not allow PJM to use sensitivity analysis to compare projects until they have passed the 1.25 benefit/cost threshold, the calculation of which is the subject of this proposed tariff change.[24]

---

[22] PJM Deficiency Response at 3-4.

[23] *Id.* at 7-8 (citing PJM Filing, Appendix II, Figure 1, which illustrates how two separate projects competing to solve the same congestion driver that differ only in their in-service dates would be evaluated under PJM's current benefit/cost ratio calculation rules and PJM's proposed rules). PJM's analysis of Figure 1 in its Filing states that, "Under the current rules that calculate the market efficiency benefit/cost ratio using a project's in-service date plus 15 years, [the project proposed to be in-service during RTEP Year + 2] has a significant advantage [over the project proposed to be in-service during the RTEP Year] due to higher, more speculative benefits in the RTEP + 15 and 16 years." PJM Filing, at Appendix II, Figure 1.

[24] *Id.* at 10-11.

14. In response to questions about whether the proposed changes would result in the resolution of PJM's transmission needs with smaller, ad hoc transmission system upgrades rather than larger-scale transmission solutions, or whether PJM's proposal would favor incumbent transmission providers that are capable of developing smaller incremental projects in the competitive proposal window process, PJM states that the proposed changes are intended to allow PJM to evaluate all proposed projects on a level playing field.[25] Relying on data it presented in the October 10 Filing at Appendix II, PJM also maintains that it has found no evidence to indicate that projects with an in-service date later than the RTEP Year would be disadvantaged under PJM's proposal when compared to projects built by the RTEP Year.[26] PJM offers as evidence that it reviewed 13 project proposals with in-service dates beyond the RTEP Year that were submitted via the competitive proposal window for the 2016/2017 market efficiency cycle and found that 11 of the 13 proposals submitted would have a higher benefit/cost ratio under the proposed Operating Agreement changes.[27] PJM concludes, based on this evaluation, that larger projects with in-service dates beyond the RTEP Year would not be disadvantaged under its proposed revisions to Schedule 6, section 1.5.7(d).

IV. Notice of Deficiency Response Filing and Responsive Pleadings

15. Notice of the December 21, 2018 Filing was published in the *Federal Register*, 84 Fed. Reg. 82 (2019), with interventions or protests due on or before January 11, 2019.

16. On January 11, 2019, the IMM filed a protest to PJM's Deficiency Response and raises three arguments. First, the IMM argues that PJM's proposal does not level the playing field for comparing transmission projects. The IMM asserts that the data and arguments that PJM provides in both its initial filing and its Deficiency Response do not support a conclusion that its proposal will not disadvantage larger or non-incumbent projects with later in-service dates. Rather, the IMM argues, PJM's data only highlights that its proposal can either result in a higher *or* lower benefit/cost ratio, depending on whether the projected annual benefits are increasing *or* decreasing for that project.

17. The IMM states that since the benefit/cost ratio uses a levelized cost approach, changes in the ratio over time are entirely a function of changes in benefits. The IMM contends that if the projected benefits of a project are increasing, excluding years beyond RTEP Year + 15 will disadvantage the project, whereas if expected benefits are

---

[25] PJM Deficiency Response at 11.

[26] *Id.*

[27] *Id.* at 5.

decreasing, excluding years beyond RTEP Year + 15 will advantage the project.[28] The IMM does not support PJM's proposal and instead suggests an alternative proposal that will establish a common end date for evaluating all competing projects, with a minimum of 15 years for each project. Under this proposal, if two projects are evaluated— e.g., one that goes into service in the RTEP Year and the other in the RTEP Year + 2— both projects would be evaluated for the time between the RTEP Year and RTEP Year + 16, so that each project is evaluated over a minimum 15-year term.

18. Second, the IMM argues that PJM's proposal would not eliminate incentives for developers with closely comparable projects to move out the in-service date in order to improve their benefit/cost ratio when compared with other projects. Instead, the IMM claims, PJM's proposal would only change the projects that would benefit from moving out the in-service dates in order to improve their benefit/cost ratios when compared with other competing projects.[29] Finally, the IMM suggests that the rules governing the benefit/cost analysis for market efficiency projects, as well as the impact of the market efficiency process on competition, should be thoroughly evaluated. The IMM states that PJM's current benefit/cost analysis for regional projects explicitly ignores the adverse effects that an RTEP project may have on a subset of other zones when calculating its estimated energy market benefits. The IMM argues that such costs for all zones and Locational Deliverability Areas should be included in the benefit/cost analysis. The IMM also argues that the rules governing benefit/cost analysis be re-evaluated, asserting that absent a rule change PJM's benefit/cost analysis will continue to overlook the possibility that actual costs may exceed expected costs significantly. Further, the IMM argues that the inclusion of market efficiency projects in the transmission planning process results in direct competition between generation and transmission to address congestion issues.[30]

19. On January 28, 2019, PJM filed an answer to the IMM's protest. PJM states that the IMM's assumptions in support of its argument that PJM's proposal does not generate a level playing field for comparing project proposals with different in-service dates are incorrect, and refutes the IMM's key arguments. First, while PJM acknowledges that there are several ways by which it could have tried to levelize the evaluation of project proposals with different in-service dates, PJM asserts that because economic benefits are

---

[28] IMM Protest 2-4. Referencing PJM's Deficiency Response, the IMM states that 85 percent of the projects submitted in the 2016/2017 market efficiency planning cycle would be advantaged by the PJM proposal simply because they have decreasing annual benefits beyond RTEP Year + 15.

[29] IMM Protest at 4-5.

[30] *Id.* at 5-7.

based on the calculation of unknown, future benefits that are inherently uncertain, all efforts to levelize the evaluation of project proposals would have pros and cons. PJM further asserts that this is true of the alternative proposal suggested by the IMM. PJM contends that the IMM's proposal would require it consider ad hoc projections for the out years (years beyond the 15-year planning horizon) that are based on a trend line without regard to any other analysis that might affect the transmission system, which PJM's proposal seeks to discontinue.[31]

20. Second, PJM refutes the IMM's claims about projects with increasing benefits being disadvantaged if further-out years are not considered. PJM states that this argument incorrectly assumes that the data relied upon to show increasing benefit/cost ratios in the out years are comparable to the benefits based on PROMOD simulations for the 15-year planning period. Instead, PJM argues, unlike the 15-year planning period, the benefits considered outside that period are beyond the PROMOD study year and, therefore, based on a trend line without regard to any other analysis that might affect the transmission system, which is why those benefits are characterized as "speculative" and "risky."[32]

21. Third, PJM refutes the IMM's argument that a project with a later in-service date with benefits that decrease over time would be able to eliminate the out years of declining benefits from the analysis for that project. PJM asserts that the IMM misses the fact that if a project with a later in-service date has a decreasing trend line, PJM will factor that information into its sensitivity analysis as a negative for the project in comparing competing project proposals. Therefore, PJM states that, under its proposal, there is no ability for a project with a later in-service date and a decreasing trend line to "game" the process.[33]

22. Finally, PJM asserts that the IMM's recommendation that PJM's entire market efficiency planning process be reevaluated is beyond the scope of this docket and beyond the tasks of the Market Efficiency Process Enhancement Task Force. To the extent that the Commission is inclined to explore either the IMM's alternative proposal or the IMM's concerns with the market efficiency planning process, PJM urges the Commission to direct the IMM to raise its proposal and its concerns through the normal PJM stakeholder process through the initiation of a problem statement.[34]

---

[31] PJM Answer at 4-6.

[32] *Id.* at 6.

[33] *Id.* at 6

[34] *Id.* at 7-8.

V. Discussion

A. Procedural Matters

23. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

24. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d), we grant the late-filed motions to intervene of NextEra, Exelon, AWEA, and Avangrid, given the parties' interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

25. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2018), prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We accept PJM's and the IMM's answers in this proceeding because they have provided information that has assisted us in our decision-making process.

B. Substantive Matters

26. As discussed below, we find that PJM's proposed revisions to section 1.5.7 of Schedule 6 are a just and reasonable and not unduly discriminatory modification to PJM's existing benefit/cost ratio calculation for evaluating market efficiency projects. Accordingly, we accept the proposed revisions to become effective on December 10, 2018, as requested. We find PJM's proposal to use the same 15-year planning period for evaluating all projects to be just and reasonable, given that the data for periods outside of the planning period are less accurate.

27. The Joint Protesters argue that PJM's proposed Operating Agreement revisions result in discrimination against projects with later in-service dates by using a shorter time period to evaluate those projects. We do not find that PJM's proposal unduly discriminates against projects with later in-service dates. In this filing, PJM has proposed only to reduce the time horizon for measuring benefits and costs to the period 15 years from the RTEP Year to correspond with its planning parameters. That change, however, does not result in an unjust and unreasonable comparison of projects with different in-service dates.

28. As PJM clarified in its Deficiency Response, PJM determines the benefits of projects by comparing the benefit/cost ratio for each project.[35] While the number of years for which the net present value of the benefits will be included in the numerator of the benefit/cost ratio for a later in-service project will be lower, so too will be the number of years of costs in the denominator, such that the benefit/cost ratios will still be comparable.[36] In support of this point, PJM provided evidence in its Deficiency Response showing that 11 of the 13 proposed projects with in-service dates beyond the RTEP Year that were submitted via the competitive proposal window for the 2016/2017 market efficiency planning cycle would have higher benefit/cost ratios under the proposed Operating Agreement changes. Thus, we do not agree that projects with in-service dates beyond the RTEP Year would be unduly disadvantaged under PJM's proposal when compared to projects that are in-service by the RTEP Year under its proposed revisions to Schedule 6, section 1.5.7(d).

29. The Joint Protesters also contend that, because incumbent transmission owners are the only entities able to propose small-scale transmission upgrades to their own systems, PJM's proposal to apply a standard evaluation to all proposed market efficiency projects may advantage smaller projects developed by incumbent transmission owners and disadvantage non-incumbent developers of larger projects with longer lead times. In the Deficiency Response, PJM clarified that there is no evidence to support the Joint Protesters' contention. As discussed above, we find that PJM's proposal creates a comparable net present value for projects regardless of their size or in-service dates and PJM's data show, in fact, that the longer term projects have higher net present values under its proposal.[37] As PJM explains, calculating such trend lines beyond 15 years from the RTEP Year is "speculative and risky."[38] PJM has made a filing to align its benefit/cost analysis with its planning horizon, and we find that proposal just and reasonable as it establishes a level playing field upon which competing market efficiency projects may be evaluated.

---

[35] The Joint Protesters did not file comments in response to PJM's Deficiency Response.

[36] PJM explains that it spreads both the costs and benefits of the project over the life of the project, such that the benefits in the numerator and the costs in the denominator are reduced equally.

[37] PJM Deficiency Response at 5 (Comparison of Project Benefit/Cost Ratio under Existing and Proposed New rules).

[38] Answer of PJM to Comments of IMM at 6.

30. The IMM argues that PJM's proposal does not appropriately adjust for projects with increasing and decreasing benefits over time, and therefore does not level the playing field for comparing transmission projects. PJM states that it does take the decreasing nature of benefits into account in doing its sensitivity studies.[39] Moreover, we do not agree that PJM's benefit/cost calculation must mathematically account for every factor in order to be just and reasonable.[40] PJM's proposal is just and reasonable because it creates a level playing field for the evaluation of all projects, by calculating benefits and costs over the same time period, using the most accurate data, and, as discussed above, determining comparable benefit/cost ratios for all projects.

31. We are not basing our acceptance on any incentives arguably created by the existing tariff for developers to "game" the benefits calculation methodology; therefore, we do not need to address Joint Protesters' assertions on this issue with regard to the currently-effective tariff. Nor do we find, as the IMM claims, that PJM's proposal would allow developers of projects with benefits that decrease over time to eliminate the out years of declining benefits from the analysis for that project. We also recognize PJM's statement, in response to the IMM's claim, that if a project with a later in-service date has a decreasing trend line, PJM will factor that information into its sensitivity analysis as a negative for the project in comparing competing project proposals.

32. Having determined PJM's proposal is just and reasonable and not unduly discriminatory, we find that it is not necessary to evaluate the IMM's alternative proposal. In addition, we find that the IMM's recommendation that PJM's entire market efficiency planning process be reevaluated is beyond the scope of this proceeding. The appropriate avenue for the IMM to raise its concerns and present an alternative proposal is through the normal PJM stakeholder process.

---

[39] *Id.* at 7.

[40] Under section 205 of the FPA, PJM is not required to "prove that its proposal is more just and reasonable than the existing system." *Duke Energy Trading & Mktg., L.L.C. v. FERC*, 315 F.3d 377, 382 (D.C. Cir. 2003) (interpreting section 4 of the Natural Gas Act which is *in pari materia* with section 205 of the FPA). Nor is PJM required to show that its approach is more just and reasonable than other approaches. *Petal Gas Storage, L.L.C. v. FERC*, 496 F.3d 695, 703 (D.C. Cir. 2007) (FERC is not required to choose the best solution, only a reasonable one).

The Commission orders:

PJM's filing is hereby accepted, to become effective on December 10, 2018, as requested, as discussed in the body of this order.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

TPA Exhibit No. 19
A-2017-2640195, et al.
2/27/19
1469

166 FERC ¶ 61,104
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Cheryl A. LaFleur, Richard Glick,
and Bernard L. McNamee.

PJM Interconnection, L.L.C. Docket No. ER19-562-000

ORDER ACCEPTING OPERATING AGREEMENT REVISIONS

(Issued February 12, 2019)

1. On December 14, 2018, pursuant to section 205 of the Federal Power Act (FPA),[1] PJM Interconnection, L.L.C. (PJM) filed revisions to its economic transmission planning process (market efficiency process) as set forth in Schedule 6, section 1.5.7, of its Amended and Restated Operating Agreement (Operating Agreement). These revisions address the generation assumptions that go into PJM's market efficiency analysis. As discussed below, PJM proposes to exclude from these assumptions, with exceptions, generation either with only an executed Facilities Study Agreement (FSA) or with an executed Interconnection Service Agreement (ISA) that is under suspension.

2. In this order, we accept the Operating Agreement revisions, to become effective February 13, 2019, as requested. Additionally, we direct PJM to submit, for informational purposes, a filing, as discussed below, within 60 days of the first annual market efficiency analysis performed under the proposed Operating Agreement revisions, and likewise submit the filing for the subsequent two annual analyses.

I. Background

3. Section 1.5 of Schedule 6 of PJM's Operating Agreement details the procedures for the development of the Regional Transmission Expansion Plan (RTEP).[2] Section 1.5.7 of Schedule 6 provides for the development of economic-based transmission enhancements or expansion under PJM's market efficiency process. For market efficiency planning, PJM uses a 24-month transmission planning cycle over the 15-year horizon of the RTEP. The

[1] 16 U.S.C. § 824d (2012).

[2] PJM Operating Agreement, Schedule 6, section 1.5 (Procedure for Development of the Regional Transmission Expansion Plan).

process is made up of two similar 12-month cycles to identify reliability-driven RTEP projects that may be accelerated or modified, and one 24-month planning cycle to provide enough time for the identification of transmission upgrades with longer lead times.[3]

4. The first step in the market efficiency planning process is the development of a set of assumptions that will be used in the market efficiency analysis.[4] Prior to 2014, PJM's Operating Agreement excluded generation projects with only an executed FSA from the market efficiency analysis. In 2014, the Commission accepted PJM's proposed change to include generation projects with only an executed FSA in the market efficiency analysis. PJM explained that it wished to add this generation to reduce or eliminate "scaling,"[5] whereby PJM increased assumed generation to meet future reserve requirements.[6] Under the existing Operating Agreement, PJM includes in the market efficiency analysis, among other things, existing in-service generation and generation with (i) an executed ISA; (ii) an executed interim ISA for which an ISA is expected to be executed; or (iii) an executed FSA.[7] After review with the Transmission Expansion Advisory Committee (TEAC), PJM may exclude generation with only an executed FSA on a case-by-case basis.[8] PJM also includes in its assumptions the expected levels of new generation and generation retirements over at least the following 15 years. If PJM finds that its reserve requirement is not met in any of its future-year market efficiency analyses, it models adequate future generation based on type and location of generation in existing PJM interconnection queues and, if necessary, adds transmission enhancements to address congestion that arises from such modeling. Regarding these provisions that are contingent on the PJM reserve requirement not being met, PJM notes that the likelihood that the provisions are necessary for at least the next 15

---

[3] PJM Transmittal at 10 (citing PJM Operating Agreement, Schedule 6, section 1.5.7(a)).

[4] *Id.*

[5] *Id.* at 3, n.3. PJM explains that generation scaling generally means adding additional megawatts to existing generation in the model, without considering a host of generator-specific factors, and without adding the actual generation projects in the PJM queue.

[6] *Id.* at 4 (citing *PJM Interconnection, L.L.C.*, Docket No. ER14-1394-000 (April 23, 2014) (delegated order)).

[7] *Id.* at 15. *See* PJM Operating Agreement, Schedule 6, sections 1.5.7(i)(iv) and 1.5.7(i)(vii).

[8] *Id.* at 9. PJM states that the process to exclude generation on a unit-by-unit basis is intended for rare circumstances.

years is slim because the PJM capacity market has incented investment in new generation to the point that PJM is well positioned with a reserve margin well over the requirement.[9]

II. Proposed Operating Agreement Revisions

5. PJM states that based on the planning cycles for 2014-2015 and 2016-2017, it has found that it is over-including in its market efficiency assumptions generation that ultimately will not proceed to commercial operation, most of which is generation either with only an executed FSA or with an executed ISA that is under suspension.[10] Furthermore, using annual data for the years 1999 through 2018, PJM finds that only about 36 percent of "completed"[11] generation projects either with an executed FSA or with an executed ISA under suspension reach commercial operation.[12] PJM states that, in comparison, about 70 percent of completed generation projects with an executed ISA or Wholesale Market Participation Agreement reach commercial operation. PJM states that the inclusion of generation either with only an executed FSA or with an executed ISA under suspension has led to a vast overstatement of the level of generation eventually reaching commercial operation.[13] PJM explains that if it underestimates or overestimates the amount of queued generation that goes into service, the models that analyze the benefits of various market efficiency projects may be significantly skewed, which in turn may affect whether projects are included in or excluded from the RTEP.[14] Under the current Operating Agreement, PJM states, the vast overstatement of generation leads to a less accurate picture of the needs for

---

[9] *Id.* at 20. *See* PJM Operating Agreement, Schedule 6, sections 1.5.7(i)(vii).

[10] *Id.* at 2.

[11] In PJM's analysis, a "completed" generation project is one that withdrew or went into service. Based on Table 1 on page 13 of the PJM Transmittal, it appears that PJM calculates the 36 percent figure by dividing the number of in-service generation projects that have executed an FSA since 1999 by the number of those projects that are completed. The 36 percent figure does not represent the percentage of generation projects with an executed FSA that eventually went into service, which is the 25 percent figure in the second-to-last column of the table. A similar clarification applies to the 70 percent figure in Table 2 on page 14 of the PJM Transmittal.

[12] PJM Transmittal at 4, 14.

[13] *Id.* at 12.

[14] *Id.* at 2-3, 13-14.

market efficiency projects in the PJM region.[15] PJM adds that including all projects either with only an executed FSA or with an executed ISA that is under suspension skews the market efficiency models towards including too much generation, which results in an unrealistic estimation of congestion.[16]

6. Consequently, PJM proposes first to exclude from its market efficiency assumptions all generation either with only an executed FSA or with an executed ISA that is under suspension; then, on a case-by-case basis, PJM will include such generation either based on a generator's specific circumstances or when PJM forecasts its system reserve margins to be below the installed reserve margin.[17] In both cases, PJM states, it will exercise this flexibility in an open, transparent process in consultation with the TEAC, and will identify the specific generation projects based on articulable factors that justify their addition.[18] PJM expects to invoke this unit-by-unit process rarely.[19] Finally, PJM notes that during its annual update to its modeling assumptions, it will add to the assumptions any previously excluded generator with an executed FSA once it executes an ISA, as well as any generator with an executed ISA coming out of suspension.[20]

III. Notice of Filing and Responsive Pleadings

7. Notice of the filing was published in the *Federal Register,* 83 Fed. Reg. 65,653 (2018), with interventions and protests due on or before January 4, 2019. On December 21, 2018, LSP Transmission Holdings, LLC (LSP Transmission), Central Transmission, LLC (Central Transmission), and ITC Mid-Atlantic Development, LLC (ITC Mid-Atlantic) filed

---

[15] *Id.* at 5.

[16] *Id.* at 15.

[17] *Id.* at 22-23. PJM explains that in the unlikely event that the forecasted system reserve margin is below the installed reserve margin, PJM will add generators either with only an executed FSA or with an executed ISA that is under suspension based on their commercial probability (the likelihood, calculated by PJM, that the generator will reach commercial operation). PJM states that it will add generators in order of probability.

[18] *Id.* at 19. PJM provides the following example of a rare situation in which it might propose to include generation either with only an executed FSA or with an executed ISA that is under suspension: when PJM fully expects that generation to come out of suspension, and that generation is impacting an identified constraint.

[19] *Id.* at 6-7.

[20] *Id.* at 18.

a motion for a two-week extension of time until January 18, 2019, to file interventions and comments. By notice issued December 27, 2018, the deadline to file intervention and comments was extended to January 11, 2019.

8. Timely motions to intervene were filed by American Electric Power Service Corporation; American Municipal Power, Inc.; Dominion Energy Services, Inc.; Exelon Corporation; FirstEnergy Service Company; LSP Transmission and Central Transmission (LS Power); Monitoring Analytics, LLC (Market Monitor);[21] NextEra Energy Transmission, LLC; North Carolina Electric Membership Corporation; Northern Indiana Public Service Company, LLC (NIPSCO); NRG Power Marketing LLC; and Public Citizen, Inc. ITC Mid-Atlantic filed an out-of-time motion to intervene.

9. LS Power and ITC Mid-Atlantic (collectively, Developers) jointly filed a protest. The Market Monitor and NIPSCO each filed comments identifying several concerns with the proposed revisions.

Protests and Comments

10. Developers argue that PJM's proposal is unjust and unreasonable, arguing that it offers no improvement in accuracy and will prevent PJM from appropriately identifying regional market efficiency needs.[22] Developers agree that PJM should fix its planning models, but argue that PJM's proposal trades one set of errors for another.[23] Developers state that PJM's goal should be a planning model that represents the most likely future scenario, not the most expedient or easily implemented model.[24]

11. Developers state that PJM admits its proposal will underrepresent prospective generation. They contend that the result will be either the failure to identify needed market efficiency projects where that new generation contributes to congestion,[25] or the false

---

[21] Monitoring Analytics filed an intervention acting in its capacity as the Independent Market Monitor for PJM.

[22] Developers Protest at 1-2.

[23] *Id.* at 3, n.4. Developers state that if a single model does not provide that accuracy, PJM should consider developing an approach that looks at several models and weights them in a way that is supported, as Midcontinent Independent System Operator, Inc., does.

[24] *Id.* at 2-3.

[25] Developers also state that this failure harms consumers and affects their rates. *Id.* at 8, 10, 15.

assumption of market efficiency benefits from transmission additions where future generation could mitigate those assumed benefits.[26] Developers state that underrepresentation of generation thus will bias the planning models.[27]

12. Developers also contend that inaccurate market efficiency planning models lead to an erroneous representation of cost allocation for transmission projects.[28] They state that if PJM approves a market efficiency project while excluding generation that does not have a signed ISA, the impact of the unaccounted-for future generation on the cost allocation will be masked and will skew the cost allocation projections. Developers claim this same issue does not arise under the existing Operating Agreement provisions, contending that while overinclusion of early-stage generation could result in PJM's identifying projects that are unnecessary (with attendant cost allocation), PJM has pointed to no example to support such a claim. Further, Developers argue that if PJM did approve a transmission project based on the inclusion of generation with only an executed FSA, the potential that cost allocation would change if the speculative generation did not come to fruition would be fully visible to all interested parties because the status of the generation included in the models would be clearly visible.[29]

13. Developers state that these cost allocation issues carry over to the state siting or approval process and raise additional risk a given project will not obtain state siting approval. They contend that those opposing the transmission project, or its prospective cost allocation, will seize on any deficiencies in PJM's analysis to cast doubt on the project. Developers state that while PJM may assert that the existing Operating Agreement provision creates similar doubt by over-including generation, PJM's discretion to remove speculative generation and the clearly visible generation remaining in the model at least allow all parties full insight into PJM's market efficiency determinations and a clearer *ex ante* picture of cost allocation under a variety of scenarios.[30] Developers assert that models that reflect the full range of potential generation additions provide a more accurate picture of the transmission

---

[26] *Id.* at 2.

[27] *Id.* at 6.

[28] *Id.* at 2 (citing *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, 136 FERC ¶ 61,051 (2011), *order on reh'g*, Order No. 1000-A, 139 FERC ¶ 61,132, *order on reh'g and clarification*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012) , *aff'd sub nom. S.C. Pub. Serv. Auth.* v. *FERC*, 762 F.3d 41 (D.C. Cir. 2014).

[29] *Id.* at 14.

[30] *Id.* at 16-17.

system to all market participants, other stakeholders, and state commissions. They claim that prospective generation with an executed FSA represents the best picture of generation to be added.[31]

14. The Market Monitor states that eliminating all generation either with only an executed FSA or with an executed ISA that is under suspension in the assumptions is inappropriate and will not better align PJM's market efficiency analysis with the realities of generation development in PJM's interconnection queue. The Market Monitor explains that the inclusion of market efficiency transmission projects in the planning process results in direct competition between generation and transmission to address congestion issues in the wholesale power market. The Market Monitor claims that the proposed exclusion of generation may make transmission projects look more economic and generation projects less economic. In such cases, it claims, the transmission projects will be more likely to be completed and will make the generating units less economic and thus contribute to the probability that the units will not be completed. The Market Monitor asserts that PJM has not explained why eliminating all this generation is consistent with an evenhanded approach to competition between generation and transmission. The Market Monitor states that rather than making piecemeal changes, PJM should more thoroughly evaluate the role of the market efficiency process and its impact on competition. It states that no further changes to favor transmission should be implemented prior to a complete review of the market efficiency process and approach.[32]

15. The Market Monitor notes that PJM does not explain why it expects that an insufficient proportion of generation projects with only an executed FSA will continue to fail to reach commercial operation, particularly under the Capacity Performance market redesign. The Market Monitor also states that if PJM is going to incorporate uncertainty into its forecasts of future generation, it should consistently incorporate uncertainty into related areas such as forecast congestion, expected fuel costs, and the future cost of constructing transmission projects.[33]

16. The Market Monitor states that given that the market efficiency approach is not identifying transmission projects needed for reliability but is defining whether PJM should permit a transmission project to displace generation, there is no reason to underestimate the level of generation. The Market Monitor believes that PJM should refine the metric used to

---

[31] *Id.* at 14.

[32] Market Monitor Comments at 2-3.

[33] *Id.* at 3. As an example, the Market Monitor notes that PJM does not discount forecast congestion in the same way that PJM proposes to discount generation in the queue, even though congestion also is unlikely to be realized at forecasted levels.

determine which units to include in the market efficiency analysis rather than merely eliminating all queue projects either with only an executed FSA or with an executed ISA that is under suspension. The goals, it contends, should be to eliminate only units that have an extremely low probability of completion, and to allow generation and transmission to compete on a more level basis.[34]

17. NIPSCO, a transmission-owning member of Midcontinent Independent System Operator, Inc. (MISO) and a member of PJM, claims that the regional transmission planning processes in PJM and MISO have an impact on their interregional transmission planning process.[35] NIPSCO requests that PJM work with MISO to perform an analysis of the impacts of PJM's proposal on interregional transmission planning, then present that analysis to stakeholders at the Interregional Planning Stakeholder Advisory Committee.[36]

18. NIPSCO also states that it cannot accurately judge the potential impacts of PJM's proposal based only on the data in Table 3 of the PJM transmittal. NIPSCO claims that the data are from just one model from one of PJM's annual planning cycles, even though each year PJM uses four models. It requests a more robust analysis based on multiple years of data that includes information on the approval and non-approval of projects.[37]

19. NIPSCO requests that PJM clarify the data used in Tables 1 and 2 of the transmittal.[38] Specifically, NIPSCO notes that Table 1 indicates that there were 885 executed FSAs from 1999 to 2018, while Table 2 indicates that there were 1,433 executed ISAs during this same time period. NIPSCO states that because all projects with a signed ISA would have a signed FSA, the data should show a number of FSAs that is greater than or equal to the number of ISAs. NIPSCO also provides an alternative calculation of the percentage of projects with only an executed FSA that reach commercial service, claiming

---

[34] *Id.* at 4.

[35] NIPSCO Comments at 1, 4.

[36] *Id.* at 5. To support its request, NIPSCO notes that Table 3 of the PJM transmittal relies on MISO/PJM constraints for 40 percent of its data.

[37] *Id.* at 5-6.

[38] As previously noted, these tables present the data with which PJM calculates the probabilities in which different classes of generation projects reach commercial service: Table 1 for generation projects with only an executed FSA, and Table 2 for generation projects with either an executed ISA or a Wholesale Market Participation Agreement.

that this alternative results in 45 percent of generation projects with only an executed FSA reaching commercial operation, a higher percentage than the one reported by PJM.[39]

IV. Discussion

A. Procedural Matters

20. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. We grant the late-filed motion to intervene of ITC Mid-Atlantic given its interest in the proceeding and the absence of undue prejudice or delay.

B. Substantive Matters

21. We accept PJM's proposed Operating Agreement revisions, to be effective February 13, 2019, as requested. Prior to 2014, the Commission found just and reasonable an Operating Agreement provision similar to PJM's current proposal; PJM excluded generation projects with only an FSA from the market efficiency analysis.[40] In 2014, PJM instituted its current Operating Agreement provision, which includes generation projects with only FSAs, subject to their exclusion on a case-by-case basis after discussion with the TEAC. In this filing, however, PJM reconsiders its 2014 change, providing evidence that only about 36 percent of "completed"[41] generation projects either with only an executed FSA or with an executed ISA under suspension reach commercial operation,[42] compared with 70 percent of completed generation projects with an executed ISA or Wholesale Market Participation Agreement that reach commercial operation. We find that the record evidence supports PJM's proposed return to its pre-2014 Operating Agreement provision, to change the default treatment of generation with executed FSAs or executed ISAs under suspension in the market efficiency analysis. Given that only 36 percent of completed projects with only executed FSAs or executed ISAs under suspension reach commercial operation, PJM has a reasonable basis to exclude those generation projects as a default in conducting its market efficiency analysis. PJM also proposes to allow generators with only executed FSAs or suspended executed ISAs to be included after review with the TEAC.

---

[39] NIPSCO Comments at 6. In its calculation, NIPSCO adds together the number of projects under construction with the number of projects in service; then it considers the percentage this sum represents of all "FSA projects."

[40] *PJM Interconnection, L.L.C.*, 119 FERC ¶ 61,265 (2007).

[41] *See supra* n.11.

[42] PJM Transmittal at 4, 14.

Therefore, if parties believe that certain projects are likely to reach commercial operation, such that they should be included, they can bring that information to the TEAC and seek inclusion as is permitted through PJM's Operating Agreement revisions.

22. Although PJM acknowledges that its proposal will not ensure complete accuracy, the record reflects that it will help improve accuracy of PJM's transmission planning by excluding generation projects from the market efficiency analysis that PJM has demonstrated have historically had a lower than 50 percent probability of going into commercial operation. Developers' argument for retaining the status quo relies on the fact that PJM has not identified a market efficiency transmission project that PJM selected in the RTEP but subsequently found not to be needed because PJM had included generation in the market efficiency analysis that did not reach commercial operation. Such a showing is not necessary for us to find the instant proposal just and reasonable. While Developers note that underrepresentation of generation will bias the market efficiency analysis under PJM's proposal, PJM contends that there will be less bias under its proposal than there is currently. We find, looking at the record as a whole, that the proposed revisions will help improve the accuracy of PJM's market efficiency analysis. In addition, PJM states that during its annual update of its modeling assumptions, it will add to the assumptions used in the market efficiency analysis any previously excluded generator with only an executed FSA once it executes an ISA, as well as any generator with an executed ISA coming out of suspension.

23. The Market Monitor argues that PJM's proposal will benefit transmission projects in their competition with generation projects to address congestion issues, making transmission projects look more economic and generation projects less economic in the market efficiency analysis. We are not persuaded by the Market Monitor's arguments that PJM's proposal provides a significant benefit to transmission projects in the market efficiency analysis. Even if we were to assume it is true that the proposal will benefit transmission projects as compared with generation projects, we find just and reasonable PJM's exclusion of generators either with only an executed FSA or with an executed ISA under suspension because the improvements to the accuracy of PJM's market efficiency analysis, discussed immediately above, outweigh any advantage that the proposal may provide to transmission projects.

24. NIPSCO and the Market Monitor both take issue with PJM's data in support of its proposal. The Market Monitor states that PJM does not explain why it believes the historical trends on which it bases its proposal will continue. However, the Market Monitor provides no support for its argument that the 20-year trend line will not continue. Given the number of years included in PJM's analysis, we find it a reasonable basis on which to support its proposal. NIPSCO also suggests that PJM conduct a more robust analysis of the multiple years of data to help stakeholders better understand why the proposed change is warranted. The data PJM provides does include information on the number of projects that went into commercial operation, which we find sufficient to justify its proposal. NIPSCO further claims to have discovered a discrepancy between Table 1 and Table 2 of PJM's

filing because the total number of generators over 20 years with an executed ISA exceeds the number of generators with an executed FSA. NIPSCO, however, fails to recognize that Table 2 includes generators with an executed ISA or a Wholesale Market Participation Agreement, which does not necessarily require an executed FSA.[43] Finally, we are not persuaded by NIPSCO's alternative calculation of the percentage of projects with an executed FSA that reach commercial service.[44]

25. In addition, we find that the protesters raise several issues that are beyond the scope of this proceeding. For example, NIPSCO requests that PJM work with MISO to analyze the impacts of PJM's proposal on interregional transmission planning, then present that analysis to the Interregional Planning Stakeholder Advisory Committee. The Market Monitor calls for a complete review of PJM's market efficiency process and how it relates to competition between generation projects and transmission projects. The Market Monitor also states that if PJM were to implement its proposal, PJM should consistently incorporate uncertainty in related areas such as forecast congestion and expected fuel costs. Developers and the Market Monitor indicate that PJM should adopt a more intricate transmission planning model to increase accuracy in choosing market efficiency projects. While it may be worthwhile for PJM to work with its stakeholders to undertake some of the suggested analysis, the issue here is limited to whether PJM's proposed Operating Agreement revision is just and reasonable. For the reasons discussed above, we find that it is.

26. Noting concerns raised regarding generation trends and visibility of the analysis, we require PJM to file with the Commission an annual informational filing regarding executed FSAs, executed ISAs under suspension, and executed ISAs. First, PJM should include an update to the information presented in Tables 1 and 2 of the PJM transmittal in support of the proposed revisions. We find that such a requirement will improve transparency for stakeholders as PJM gains additional information and experience utilizing the new assumptions in the modeling component of its market efficiency analysis. Second, we also direct PJM to include in the annual informational filing the number of generators with only an executed FSA or an executed ISA under suspension that were included in the assumptions of the market efficiency analysis on a case-by-case basis after consultation with the TEAC. Lastly, PJM should also conduct a sensitivity analysis of its modeling of expected congestion included in the market efficiency study process under the revised Operating Agreement provisions, as compared to what would have been included prior to the revised Operating Agreement provisions. PJM should make the results of such analysis available in the same manner in which it makes other results available to stakeholders, and

---

[43] *Id.* at 14, Table 2. Also not necessarily requiring an executed FSA are generators with executed ISAs without network upgrade requirements.

[44] *See supra* n.39.

should note in its annual informational filing completion and provision of such analysis. We direct PJM to submit this informational filing within 60 days of the first annual market efficiency analysis performed under this Operating Agreement revision, and to do likewise for the two subsequent annual analyses, for a total of three years.[45]

The Commission orders:

(A) PJM's proposed Operating Agreement revisions are hereby accepted, effective February 13, 2019, as discussed in in the body of this order.

(B) PJM is directed to submit an annual informational filing, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[45] This filing will be for informational purposes and will not be noticed for comment or subject to Commission order.