STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANA MICHIGAN POWER COMPANY (I&M) FOR APPROVAL OF RENEWABLE ENERGY PURCHASE AGREEMENTS WITH THE HOOSIER LINE SOLAR PROJECT AND THE MEADOW LAKE IV WIND PROJECT (CLEAN ENERGY PPA PROJECTS) AS CLEAN ENERGY PROJECTS AND ASSOCIATED ACCOUNTING AND RATEMAKING, INCLUDING TIMELY COST RECOVERY, UNDER IND. CODE § 8-1-8.8-11.	)	**CAUSE NO.** 46088

SUBMISSION OF DIRECT TESTIMONY OF JOSHUA BURKHOLDER

Petitioner Indiana Michigan Power Company ("Petitioner" or "I&M"), by counsel, hereby submits the direct testimony of Joshua Burkholder.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing was served this 20th day of June, 2024, by email transmission, hand delivery or United States Mail, first class, postage prepaid to:

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I&M Exhibit: _____

INDIANA MICHIGAN POWER COMPANY

PRE-FILED VERIFIED DIRECT TESTIMONY

OF

JOSHUA BURKHOLDER

Contents

DIRECT TESTIMONY OF JOSHUA BURKHOLDER
ON BEHALF OF
INDIANA MICHIGAN POWER COMPANY

I. Introduction of Witness

Q1. Please state your name and business address.

My name is Joshua Burkholder. My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

Q2. By whom are you employed and in what capacity?

I am employed by the American Electric Power Service Corporation (AEPSC) as the Managing Director of RTO Strategy and Policy in AEPSC's FERC and RTO Strategy and Policy group. AEP is the parent company of Indiana Michigan Power Company (I&M or Company). AEPSC provides engineering, financing, accounting, regulatory, and similar planning and advisory services to AEP's regulated electric operating companies, including I&M.

Q3. Briefly describe your educational background and professional experience.

I earned a bachelor's degree with honors in economics in 1997 from the University of Maryland in College Park, MD. I graduated from The Ohio State University, Fisher College of Business with a Master of Business Administration in 2002. From 1997 to 2000, I held the position of Economist at the U.S. Department of Commerce, Bureau of Economic Analysis, where I participated in analysis of international financial data.

I joined AEPSC in 2002 as an associate in commercial operations and worked on various business development projects and AEP's integration into PJM Interconnection, LLC (PJM). In 2004, I joined AEPSC's Corporate Planning and

Budgeting organization as a Staff Financial Analyst of Strategic Initiatives and was promoted to Manager of Strategic Initiatives in 2007. In this role, I was responsible for working with AEPSC leadership in developing AEP's strategic plan and other strategic studies and analysis. In 2009, I transferred to AEP's transmission business unit as Manager, Transmission Strategy and Business Development where I was responsible for coordinating activities associated with the operations of the AEP transmission companies and for budgeting and financial analysis for the AEP transmission organization. In 2012, I was promoted to Director of Competitive Transmission Development for AEP's affiliate company Transource Energy, LLC. There, I was responsible for securing competitive transmission projects within the PJM and MISO regions. In 2018, I was named Director, FERC and RTO Strategy and Policy, responsible for federal and regional policy matters impacting AEP's transmission and generation businesses. In March 2023, I was promoted within the same group to my current position.

Q4. What are your responsibilities as a Managing Director of RTO Strategy and Policy?

I lead a team that is responsible for the development and advocacy of AEP's and its subsidiaries' strategies and positions in their respective Regional Transmission Organization (RTO), including PJM, regarding policy matters impacting the transmission and generation functions. This includes working closely with AEP operating companies and other AEP leadership to determine the impacts of and develop positions regarding potential policy changes. My team is deeply engaged in the stakeholder process ranging from technical working groups to the most senior standing committees.

II. Purpose of Testimony

Q5. What is the purpose of your testimony?

My testimony supports the Company's request for approval of the Meadow Lake IV Wind and Hoosier Line Solar (collectively, the Clean Energy Projects) purchase power agreements (PPAs). I explain the capacity market changes regarding accreditation and risk modeling that in turn affects the planning reserve margin (PRM) that have taken place in PJM resulting in updated assumptions in the Company's Portfolio Optimization Analysis (POA) by Company witness Becker. My testimony also addresses changes that have happened in the generation interconnection process within PJM and how the new generation interconnection process is designed, which had an impact on the 2023 All Source Request for Proposal process described by Company witnesses Dehan and Gaul.

III. PJM Policy Changes to Capacity Construct

Q6. What capacity construct changes impacted the Company's POA?

The capacity construct changes that impacted the POA supported by Company witness Becker are modifications to PJM (1) risk modeling that resulted in updates to the planning reserve margin requirements and (2) resource accreditation or how much capacity value a generating resource is assigned by PJM. I describe the adjustments and their development in more detail below.

Q7. Please describe the PJM stakeholder process for how the current capacity construct changes were developed.

On February 24, 2023, the PJM Board initiated an accelerated process to address resource adequacy issues called the Critical Issue Fast Path (CIFP).

PJM held stakeholder meetings starting in March through August and concluded with a stakeholder advisory vote for the PJM Board in August 2023.

Q8. What was the outcome of the CIFP process?

The PJM Board directed PJM to file changes to the capacity construct at the Federal Energy Regulatory Commission (FERC). On October 13, 2023, PJM submitted filings at FERC regarding the capacity construct changes that would apply starting with the 2025/26 Delivery Year capacity auction. As relevant to this proceeding, the changes impacting the Portfolio Optimization Analysis were included in Docket No. ER24-99. On January 30, 2024, FERC issued an order in Docket ER24-99 approving PJM's proposed changes. These changes will be implemented beginning with the 2025/2026 Delivery Year.

Q9. Please describe the relevant changes filed by PJM.

PJM modified their approach for accreditation and risk modeling that in turn affects the PRM. PJM expanded the evaluation of resource adequacy risk beyond the historical summer peak periods to include all seasons. The changes are meant to better determine periods of resource adequacy risk and more accurately estimate resource performance during those risk periods. This is intended to improve PJM's ability to procure adequate resources during all identified periods of risk.

Q10. Please further describe the impact on capacity accreditation.

Regarding resource capacity accreditation, FERC approved PJM's proposal to adopt the marginal Effective Load Carrying Capability (ELCC) approach that factors into the analysis a blend of summer and winter capabilities of different generating units. The marginal ELCC approach is intended to determine the capacity value of each resource's marginal contribution to maintaining reliability when the PJM system is most stressed. Those resources that are able to

perform during times of system stress (high risk periods) have a higher ELCC rating than resources less able to perform.

Q11. Has PJM provided capacity values for each resource type?

Yes. Below in Table JB-1 is PJM's ELCC capacity accreditation for each resource class that applies for the 2025/26 Delivery Year. These capacity values for individual units are further refined using an individual performance factor adjustment provided by PJM. These were the values adopted by Company witness Becker in the POA.

Table JB-1: ELCC Class Ratings

ELCC Class Ratings for the 2025/2026 Base Residual Auction

The following table provides the ELCC Class Ratings applicable to the 2025/2026 Base Residual Auction (BRA) as calculated under the methodology approved by FERC on January 30TH, 2024 in Docket No. ER24-99.

	2025/2026 BRA ELCC Class Ratings
Onshore Wind	35%
Offshore Wind	60%
Fixed-Tilt Solar	9%
Tracking Solar	14%
Landfill Intermittent	54%
Hydro Intermittent	37%
4-hr Storage	59%
6-hr Storage	67%
8-hr Storage	68%
10-hr Storage	78%
Demand Resource	76%
Nuclear	95%
Coal	84%
Gas Combined Cycle	79%
Gas Combustion Turbine	62%
Gas Combustion Turbine Dual Fuel	79%
Diesel Utility	92%
Steam	75%

Q12. Please describe the changes for PJM's risk modeling resulting in updates to the planning reserve margin.

PJM enhanced their risk modeling by moving to an hourly model to determine the PJM system's resource adequacy risk. The hourly model analyzes all hours

in a year instead of the historical approach of analyzing just the peak hour of each day. With the changing resource mix, there will be more resources with greater hourly performance variability. PJM models load uncertainty and resource performance uncertainty to determine the amount of installed capacity reserves and the capacity necessary to meet expected demand plus reserves to meet the reliability standard. This resulted in an increased Installed Reserve Margin based on the new methodology. The installed Reserve Margin represents the amount of nameplate capacity (ICAP) needed to satisfy reliability requirements.

Q13. What is the impact of PJM's risk modeling on the PRM?

The risk modeling in combination with the accreditation changes resulted in an overall lower PRM reducing I&M's capacity planning reserve margin obligations as detailed by Company witness Becker.

IV. Generation Interconnection Process

Q14. How did changes to the generation interconnection process impact the Company's resource selections?

It is my understanding based on Company witnesses Dehan, Gaul and witness Koujak that there were two important impacts on the RFP process. First, certain projects were qualified by PJM to proceed under the "Fast Lane" process that was part of FERC approved interconnection process reforms. Second, as further explained below, it was determined that a repowering option for the existing Rockport site would not meet the required commercial operations date (COD) based on how such a project would be considered in the reformed PJM generation interconnection process.

Q15. Please describe PJM's interconnection process reforms filed at FERC[1] that included the Fast Lane.

PJM modified their interconnection process by moving from a serial queue process to a "first-ready, first-served" clustered cycle process for both studies and cost allocation. A clustered cycle is simply a group of projects that are studied together in a single study, rather than on an individual basis in serial fashion based on the order in which the projects entered the queue. PJM's new queue process also offers decision points at which interconnection customers will need to provide readiness deposits and meet other threshold requirements to move forward, thus permitting projects that are ready to progress to do so while incentivizing projects that are not ready to proceed to exit the interconnection process.

Q16. Please describe how PJM plans to transition from the existing process to the new interconnection process.

PJM outlined a plan to ensure a timely transition to the new interconnection process while providing an expedited process for projects in the existing interconnection queue that were close to completing that process. The transition activities to the new interconnection process consisted of two cycles, Transition Cycle 1 and Transition Cycle 2, which PJM stated should be completed by the end of 2025 and 2026, respectively, and the Fast Lane. PJM notified its stakeholders in June of 2023 that the starting date for these transition activities would occur on July 10, 2023.

Q17. Please describe the Fast Lane that was part of the transition activities to the new interconnection process.

The Fast Lane was a one-time process as part of the transition activities to the new interconnection process that prioritized projects that were already in the

[1] Docket Nos. ER22-2110-000 and ER-2110-001.

interconnection queue that have little interaction with other projects and required minimal restudy to interconnect. Projects qualifying for the Fast Lane would be studied first by PJM as part of the transition activities, regardless of their previous position in the queue, and PJM expected to issue final interconnection agreements to Fast Lane projects in 2024.

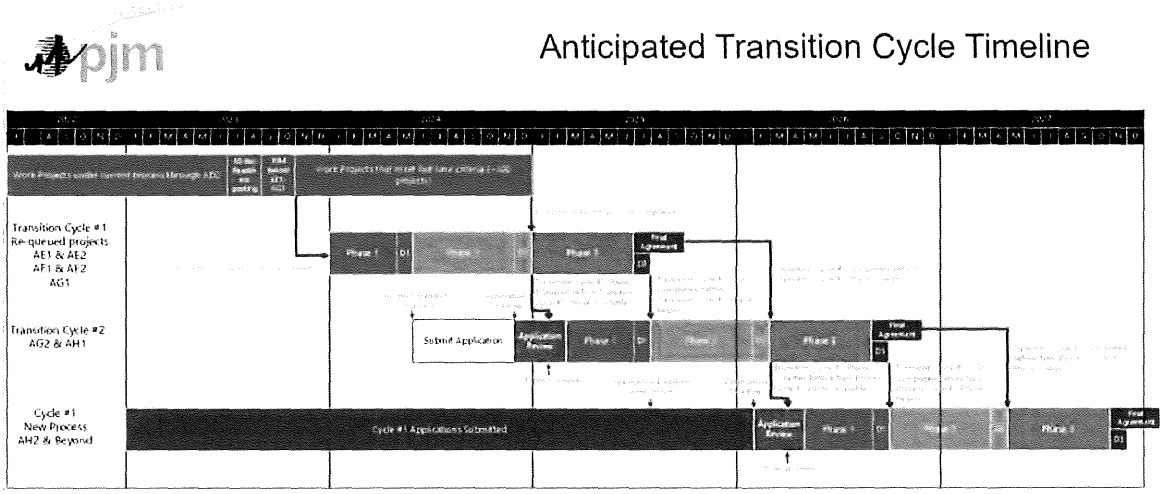
Q18. What projects were eligible for the Fast Lane?

All projects in PJM's interconnection queue associated with queue windows between 2018-2020 that did not have an executed service agreement in place and had not been tendered a service agreement for execution were eligible for inclusion in the Fast Lane. Eligible projects that did not have potential cost responsibility for Network Upgrades greater than $5 million were put into the Fast Lane. In September of 2023, PJM announced that approximately 450 projects met the criteria for inclusion in the Fast Lane. Company witness Gaul describes how the Fast Lane was considered in the resource selection process.

Q19. Following the transition activities, when does PJM expect to study new interconnection requests under the new interconnection process?

According to PJM's anticipated Transition Cycle Timeline, shown in Table JB-2, new interconnection applications will not be studied until after the transition activities and are anticipated to be studied beginning in March of 2026.

Table JB-2: PJM Anticipated Transition Cycle Timeline



Q20. How does PJM currently evaluate repowering interconnection requests from owners of existing generating capacity resources?

Owners of existing generation capacity resources are permitted to transfer their Capacity Interconnection Rights (CIRs) to an affiliated or non-affiliated entity to use those CIRs for a new generation resource. However, new generation resource must be associated with a new or existing application in the PJM interconnection process that is evaluated similarly to any other new project. The only exception is if the fuel source of the new generation resource is the same as the retiring resource.

Q21. How are new repowering requests (CIR transfers) impacted by the reforms to the PJM interconnection process?

It is my understanding from Company witness Dehan that there was not an existing application in the PJM interconnection queue for a Rockport repowering project. Therefore, any such project would require a new application. As I state above, PJM would begin the study process for a new application no earlier than in March of 2026. Company witness Dehan and witness Koujak explain the

impact of this timing on the resource selection process regarding the Rockport Plant site.

Q22. Is PJM's process for addressing repowering interconnection requests different from that used by other RTOs such as the Midcontinent Independent System Operator, Inc. (MISO) and the Southwest Power Pool (SPP)?

Yes. Unlike PJM, MISO and SPP have an expedited process for CIR transfers outside of the interconnection queue process that is limited to screening studies to identify material impacts to the transmission grid. If the CIR transfer does not cause a material impact, then the repowering request can move much more quickly than a new application into the interconnection queue process.

Q23. During the period relevant to this proceeding, did FERC issue an order requiring interconnection process reforms for all regions and was there the possibility that FERC would requiring an expedited process for CIR transfers as part of this order?

Yes. FERC issued Order 2023 on July 27, 2023, that required all regions to follow certain consistent interconnection practices. However, FERC did not require regions to include an expedited process for CIR transfers. Therefore, it is not expected that PJM would implement such an expedited process in compliance with FERC Order 2023. Company witness Dehan and witness Koujak discuss the implications of this in the resource selection process.

V. Conclusion

Q24. Please summarize your conclusions and recommendations.

As I have explained above, there have been policy changes at PJM that the Company must follow and specifically impacted the POA described by Company witness Becker and the RFP process described by Company witnesses Dehan and Gaul and witness Koujak. These changes affected important elements of the PJM capacity construct and interconnection process.

Q25. Does this conclude your pre-filed verified direct testimony?

Yes.

VERIFICATION

I, Joshua Burkholder, Managing Director of RTO Strategy & Policy for American Electric Power Service Corporation, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information, and belief.

Date: 6/11/2024

Joshua Burkholder

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