2023 Michigan State Infrastructure Report (January 1, 2023 – December 31, 2023)

June 2024

This report reflects information for the portion of Michigan within the PJM service territory.

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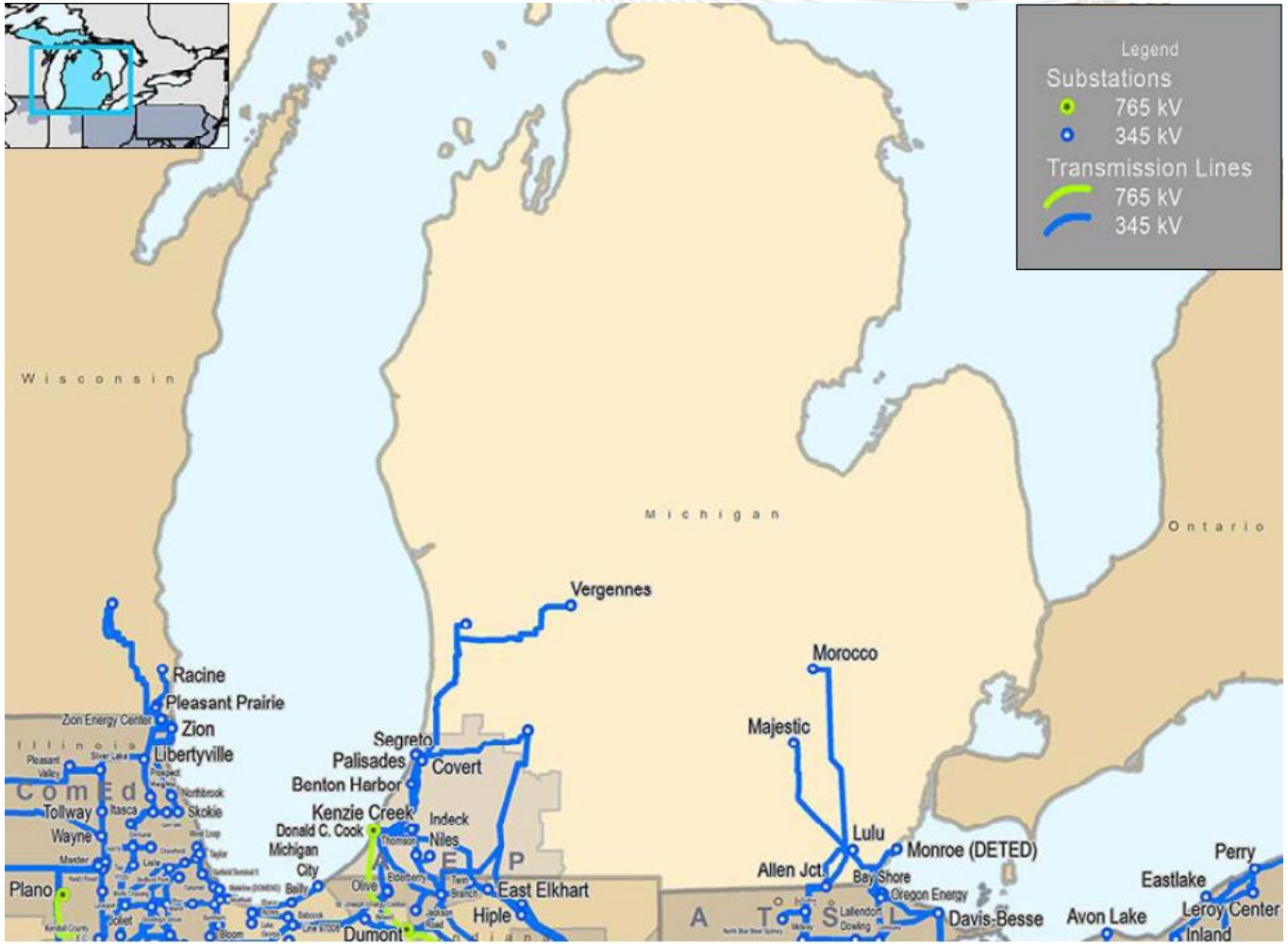
In the Michigan service territory:

Existing Capacity:	• In the Michigan portion of PJM, nuclear represents 66% of the total installed capacity and natural gas represents 33%. • In PJM natural gas and coal are 48% and 22% of total installed capacity, while nuclear represents 18%.
Interconnection Requests:	• Solar represents 89% of new interconnection requests while storage represents 11% of new requests.
Deactivations:	Michigan had no generators deactivate or give a notice of deactivation in 2023.
RTEP 2023:	Michigan's 2023 RTEP project total represents approximately $29.63 million in investment.

In the Michigan service territory:

Load Forecast:	Michigan's summer peak load is projected to increase by 0.3% percent annually over the next ten years, while the winter peak is projected to increase by 0.2% percent.
Capacity Market:	No Base Residual Auction was conducted in 2023. For the most recent auction results please see the 2022 Michigan State Infrastructure Report.
Market Performance:	Michigan's average hourly LMPs were lower than the PJM average hourly LMP.

PJM Service Area in Michigan



The PJM service area in Michigan is the AEP zone and is represented by the shaded portion of the map.

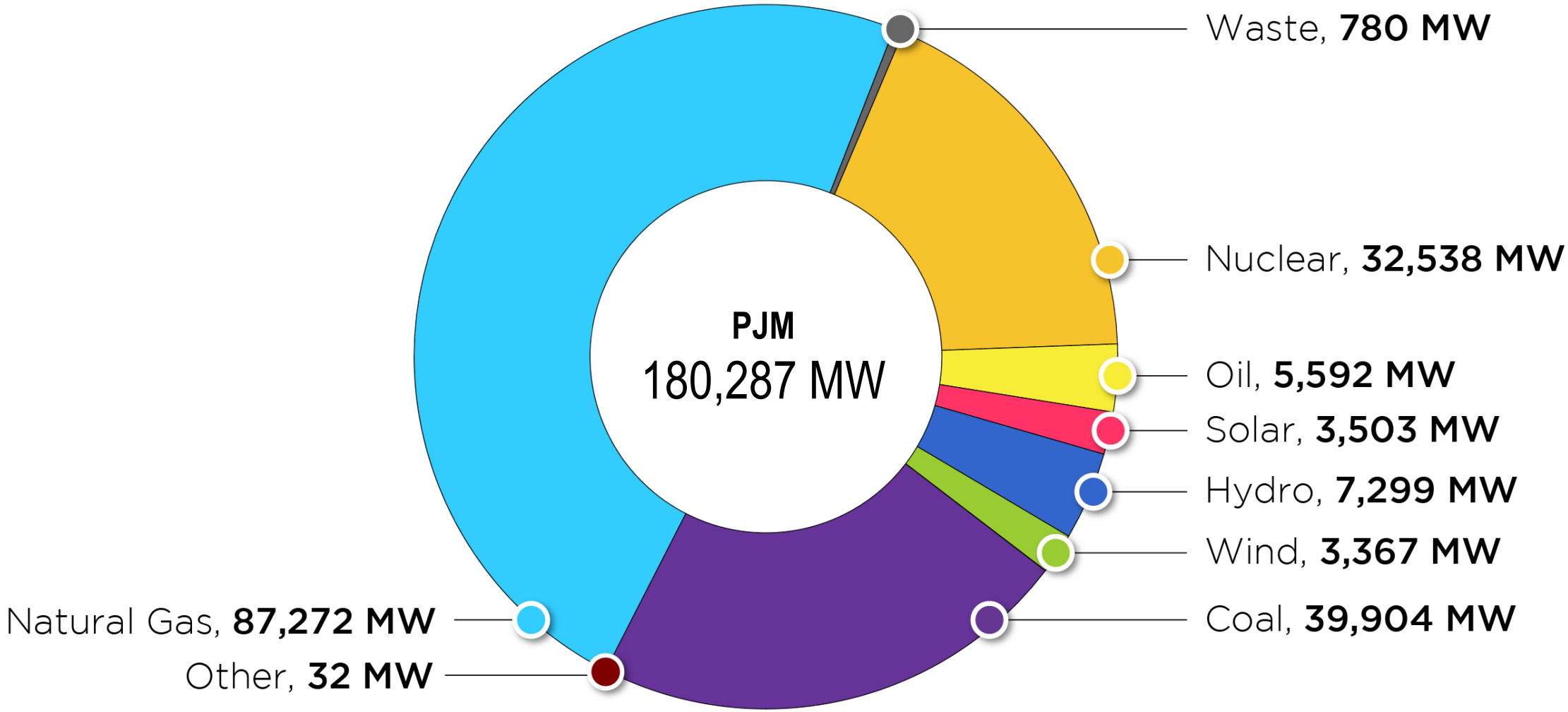
PJM operates transmission lines that extend beyond the service territory.

Planning

Generation Portfolio Analysis

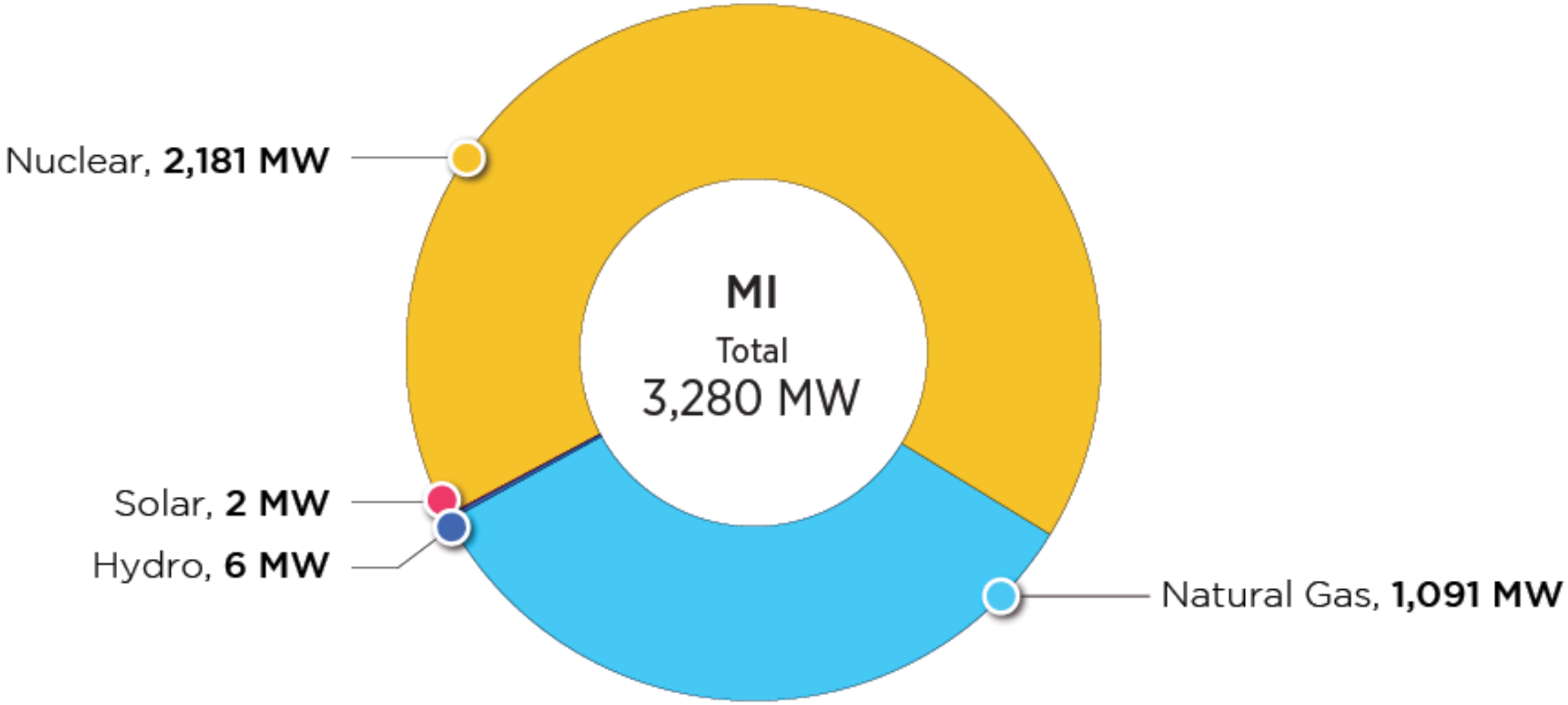
PJM Existing Installed Capacity Mix

(CIRs – as of Dec. 31, 2023)



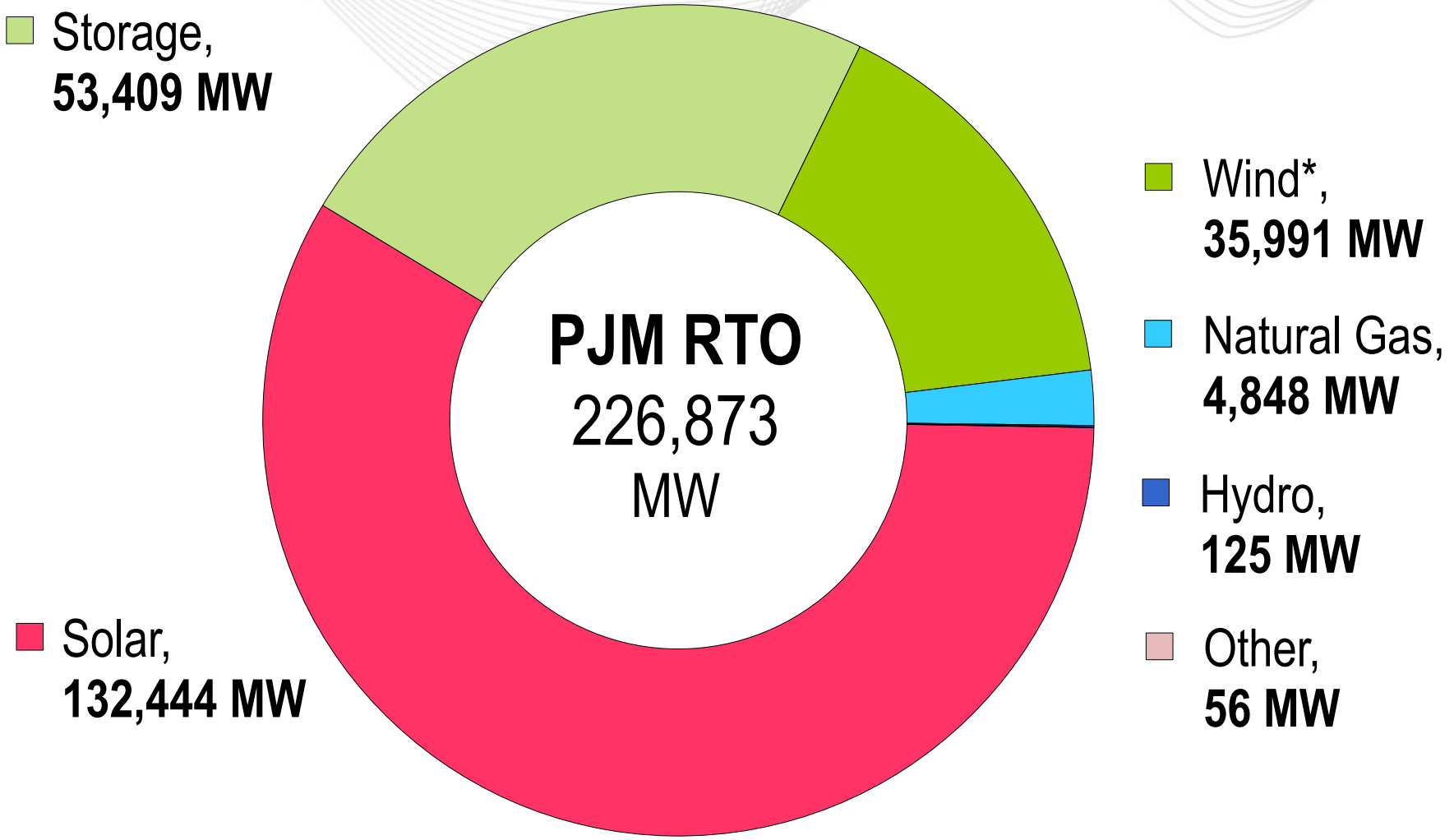
Michigan – Existing Installed Capacity (MW) by Fuel Type

(as of Dec. 31, 2023)



PJM Queued Capacity (Nameplate) by Fuel Type

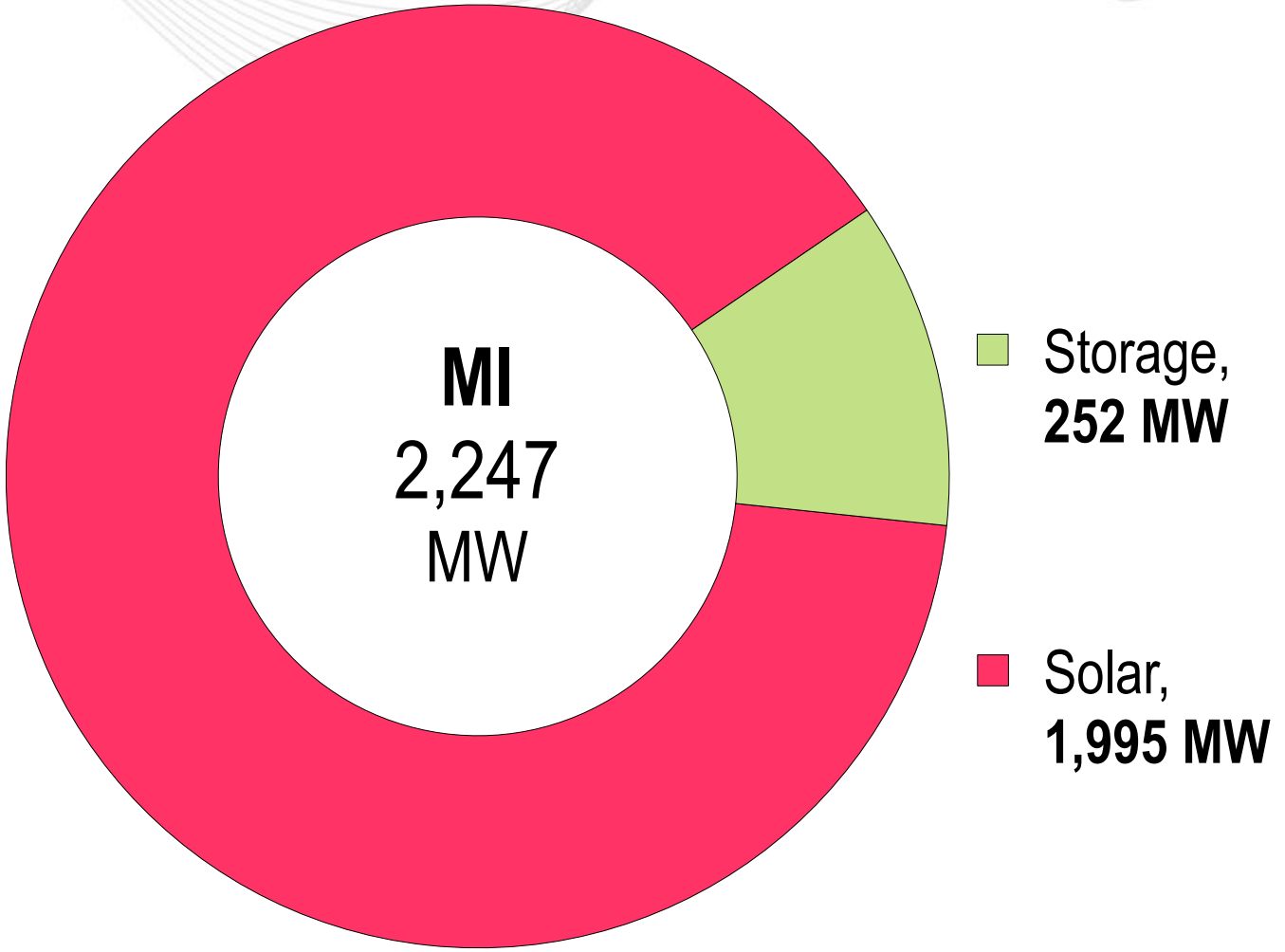
("Active" in the PJM Queue as of April 1, 2024)



*Wind includes both onshore and offshore wind

Michigan Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of April 1, 2024)



Michigan – 2023 Generator Deactivations

Michigan had no generators deactivate or give a notice of deactivation in 2023.

Planning

Transmission Infrastructure Analysis

For reporting purposes, the 2023 state infrastructure reports provide maps displaying all baseline, network, and supplemental projects for the respective state. The reports also include aggregated project costs for each type of project within each state. The costs listed in the state infrastructure reports and 2023 Annual RTEP Report are not indicative of each project's cost allocation.

For a detailed list of each project shown on a state's project map, please see that state's section in the **2023 Annual RTEP Report** on PJM.com: https://pjm.com/-/media/library/reports-notices/2023-rtep/2023-rtep-report.ashx.

The complete list of all RTEP projects in PJM, including those from prior years, can be found at the **RTEP Upgrades & Status – Transmission Construction Status** page on PJM.com: https://www.pjm.com/planning/m/project-construction.

Michigan – RTEP Baseline Projects

Michigan had no baseline projects in 2023.

Note: Baseline upgrades are those that resolve a system reliability criteria violation. Baseline projects listed in the annual RTEP report reflect project costs within a specific location and are not indicative of the project's cost allocation.

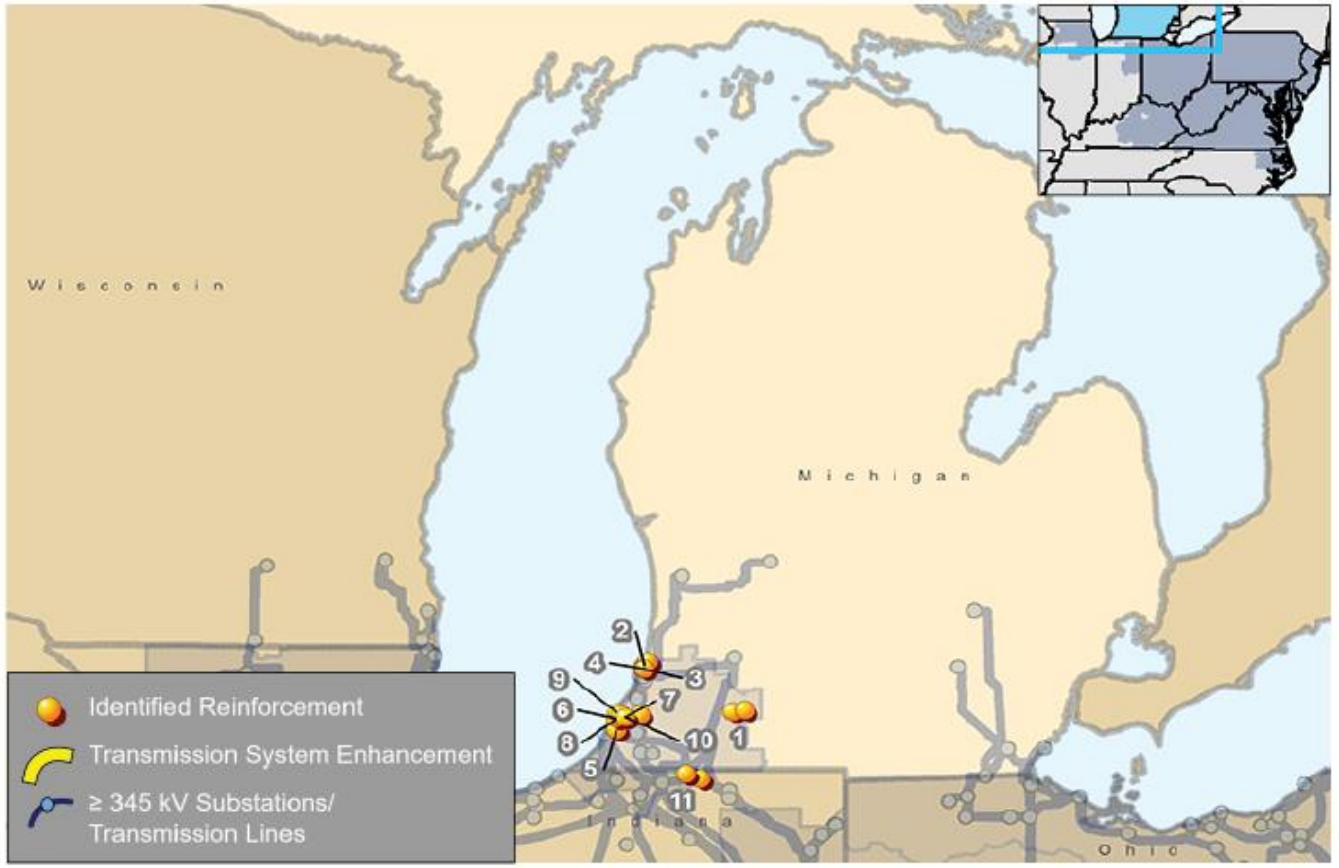
Michigan – RTEP Network Projects

Michigan had no network projects in 2023.

Note: Network projects are new or upgraded facilities required primarily to eliminate reliability criteria violations caused by proposed generation, merchant transmission or long-term firm transmission service requests, as well as certain direct connection facilities required to interconnect proposed generation projects. The costs of network projects are borne by the interconnection customer.

Michigan Supplemental Projects

(as of Dec. 31. 2023)

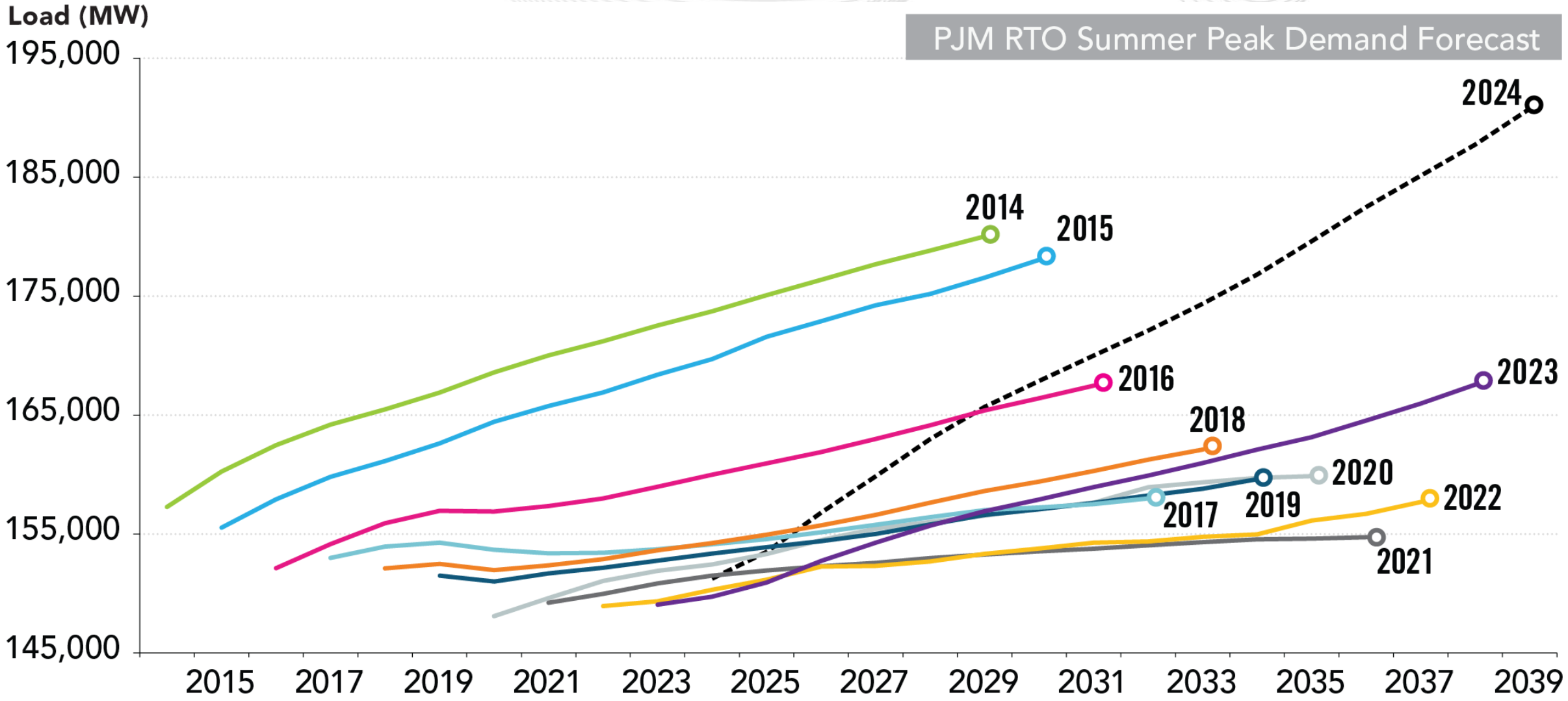


The 2023 RTEP has $29.63 million in supplemental projects located in Michigan.

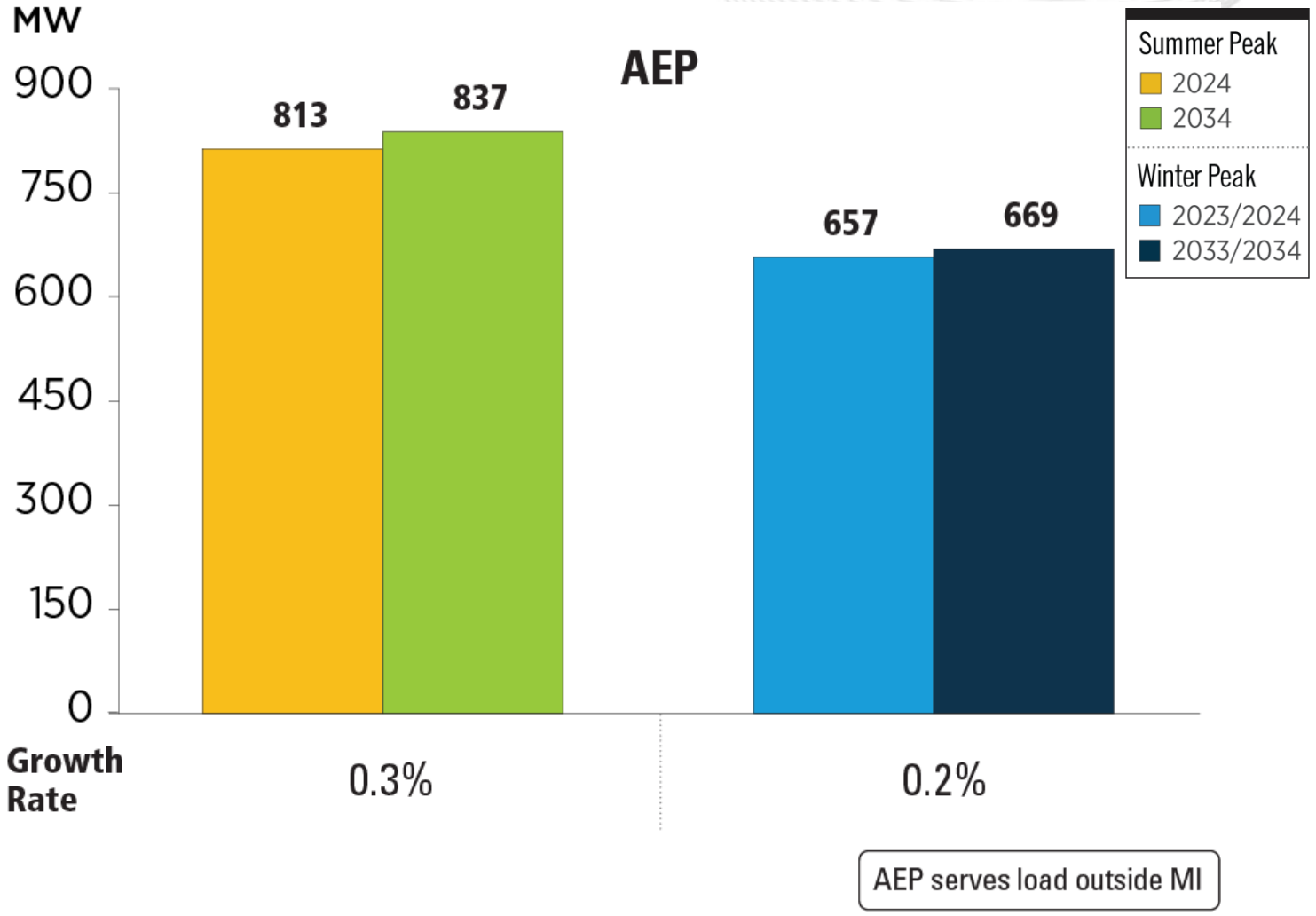
Note: Supplemental projects are transmission expansions or enhancements that are not required for compliance with PJM criteria and are not state public policy projects according to the PJM Operating Agreement. These projects are used as inputs to RTEP models, but are not required for reliability, economic efficiency or operational performance criteria, as determined by PJM.

Planning
Load Forecast

PJM Electricity Demand Growth



Michigan – 2024 Load Forecast Report



PJM RTO Summer Peak

2024	2034
151,247 MW	176,822 MW

Growth Rate 1.6%

PJM RTO Winter Peak

2023/2024	2033/2034
134,659 MW	163,069 MW

Growth Rate 1.9%

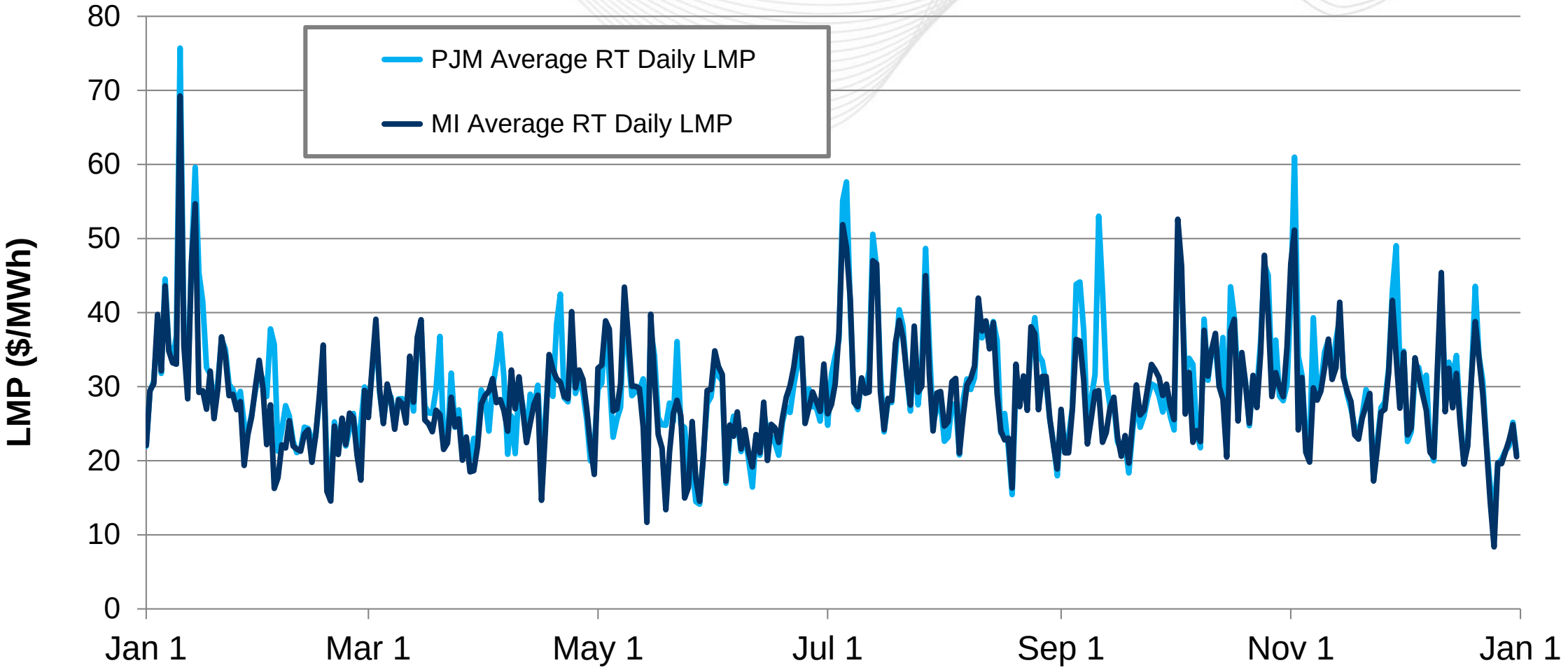
The summer and winter peak megawatt values reflect the estimated amount of forecast load to be served by each transmission owner in the noted state/district. Estimated amounts were calculated based on the average share of each transmission owner's real-time summer and winter peak load in those areas over the past five years.

Markets

Market Analysis

Michigan – Average Daily LMP

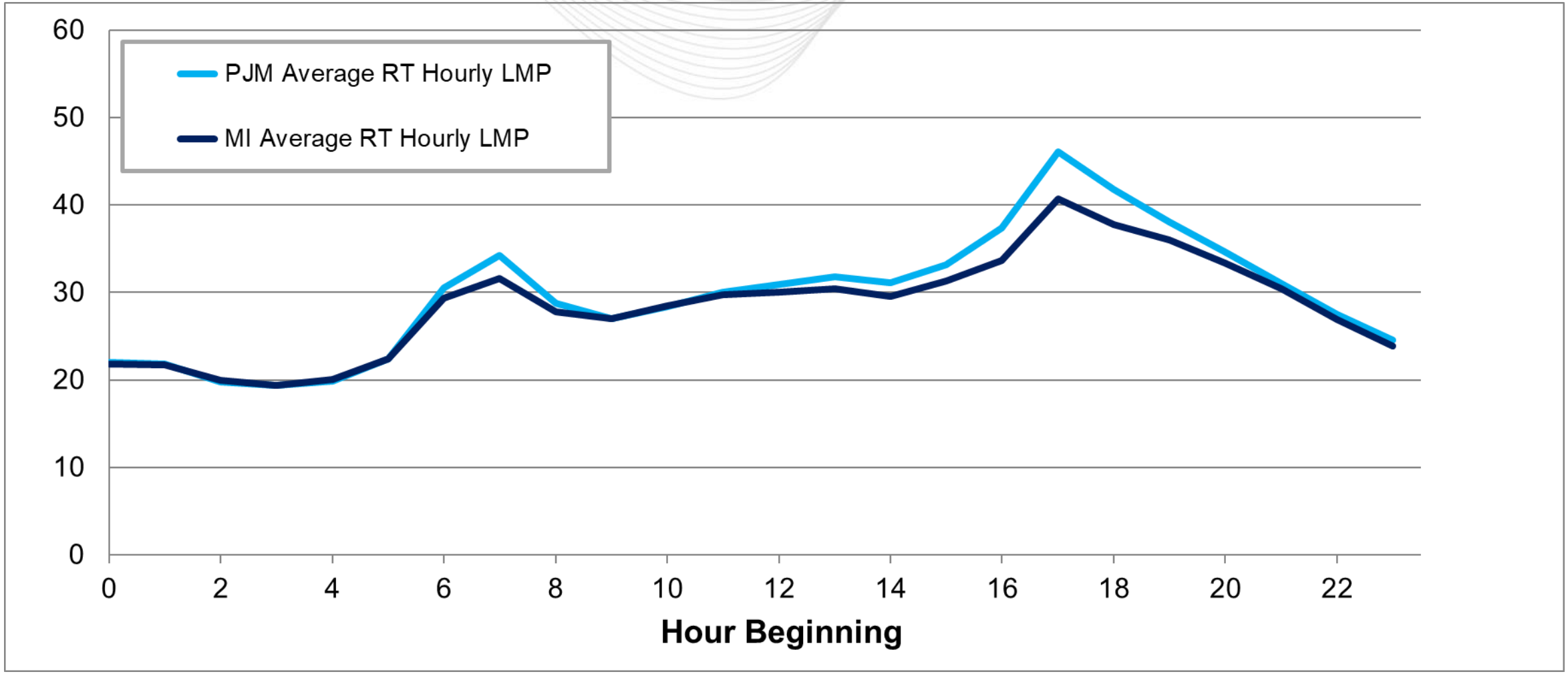
(Jan. 1, 2023 – Dec. 31, 2023)



Michigan – Average Hourly LMP

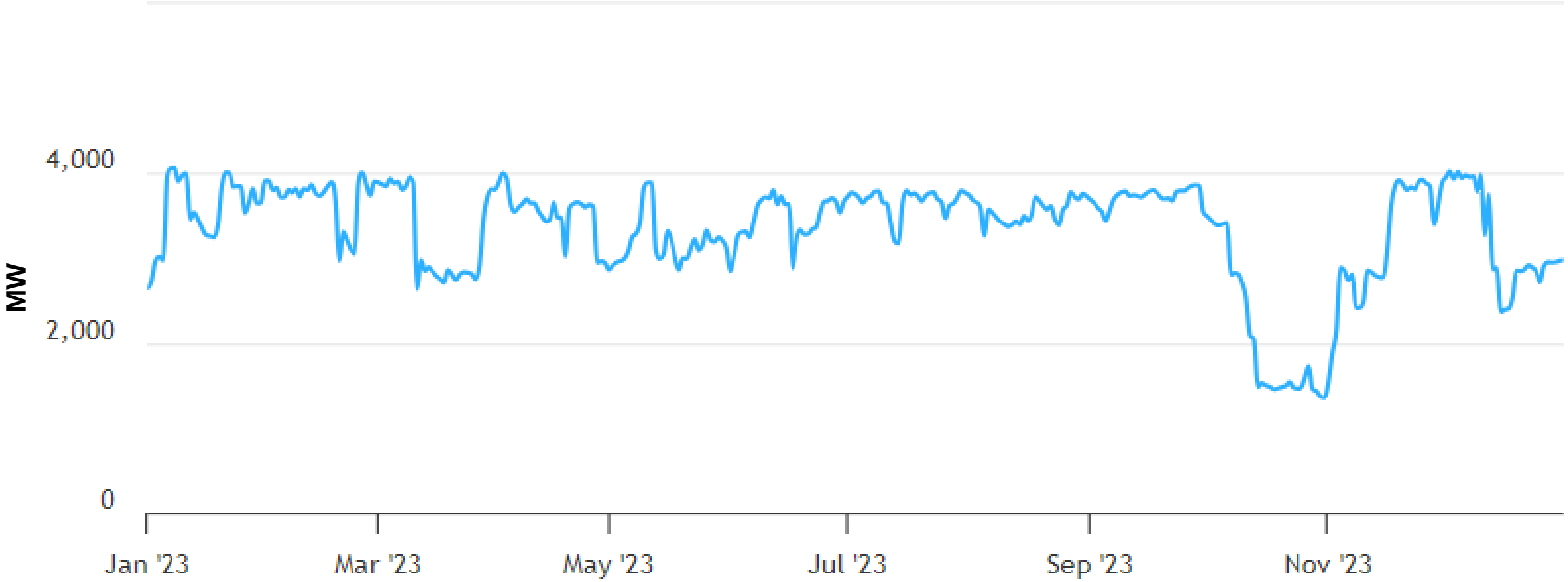
(Jan. 1, 2023 – Dec. 31, 2023)

Michigan's average hourly LMPs were slightly lower than the PJM average hourly LMP.



Michigan – Net Energy Import/Export Trend

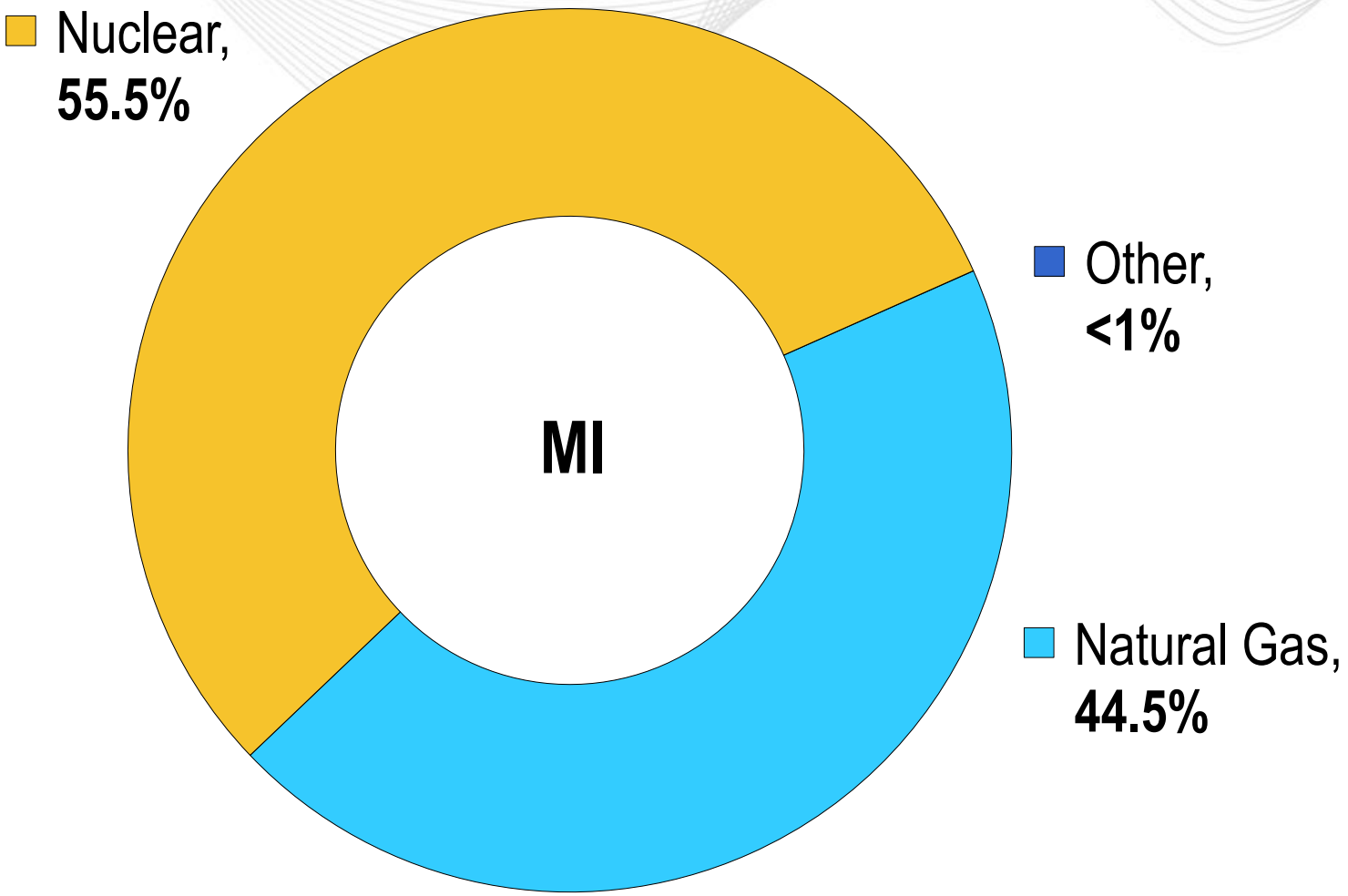
(Jan. 2023 – Dec. 2023)



This chart reflects the portion of Michigan that PJM operates. Positive values represent exports and negative values represent imports.

Operations

Michigan – 2023 Generator Production



The data in this chart comes from EIA Form 923 (2023) and represents only generators within the PJM portion of Michigan.

2005–2023 PJM Average Emissions

(March 2024)