



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

June 2024

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

Planning

- Generation Portfolio Analysis
- Transmission Analysis
- Load Forecast

Markets

- Market Analysis
- Net Energy Import/Export Trend

Operations

- Generator Production
- Emissions Data

In the Illinois service territory:



Existing Capacity:

- In the Illinois portion of PJM, natural gas represents 45% of the total installed capacity while nuclear represents 39%.
- In PJM, natural gas and coal are 48% and 22% of total installed capacity, while nuclear represents 18%.



Interconnection Requests:

- Solar represents 51% of new interconnection requests, storage represents 31%, and wind 17% of new requests.



Deactivations:

Illinois had 1,381 MW of generation deactivate in 2023.



RTEP 2023:

Illinois's 2023 RTEP project total represents approximately \$315.4 million in investment.

In the Illinois service territory:



Load Forecast:

Illinois's summer peak load is projected to remain flat annually over the next ten years, while the winter peak is projected to increase by 0.6% percent.



Capacity Market:

No Base Residual Auction was conducted in 2023. For the most recent auction results please see the 2022 Illinois State Infrastructure Report.



Market Performance:

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



Emissions:

Illinois's average CO₂ emissions decreased in 2023 compared to 2022 levels.



The PJM service area in Illinois is the ComEd zone and is represented by the shaded portion of the Illinois state map.

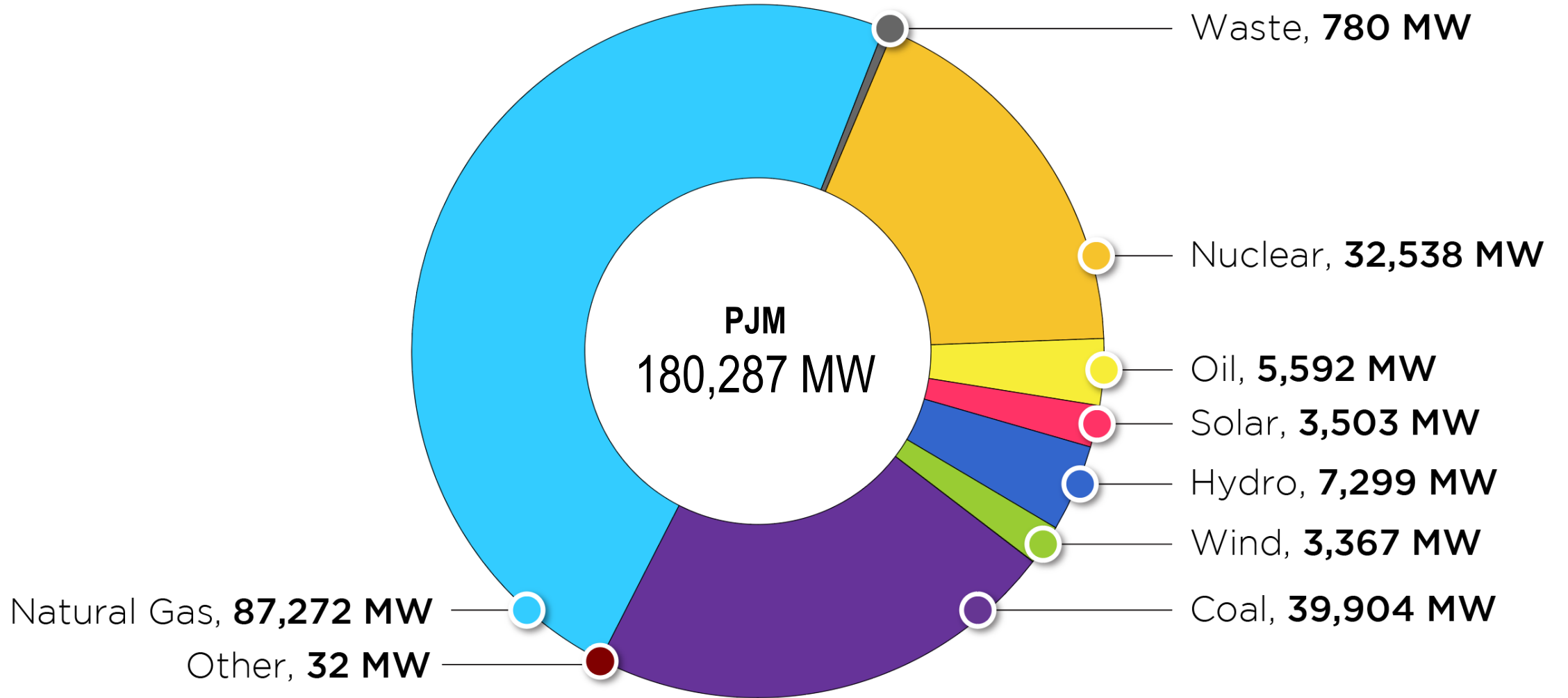
PJM operates transmission lines that extend beyond the service territory.

Planning

Generation Portfolio Analysis

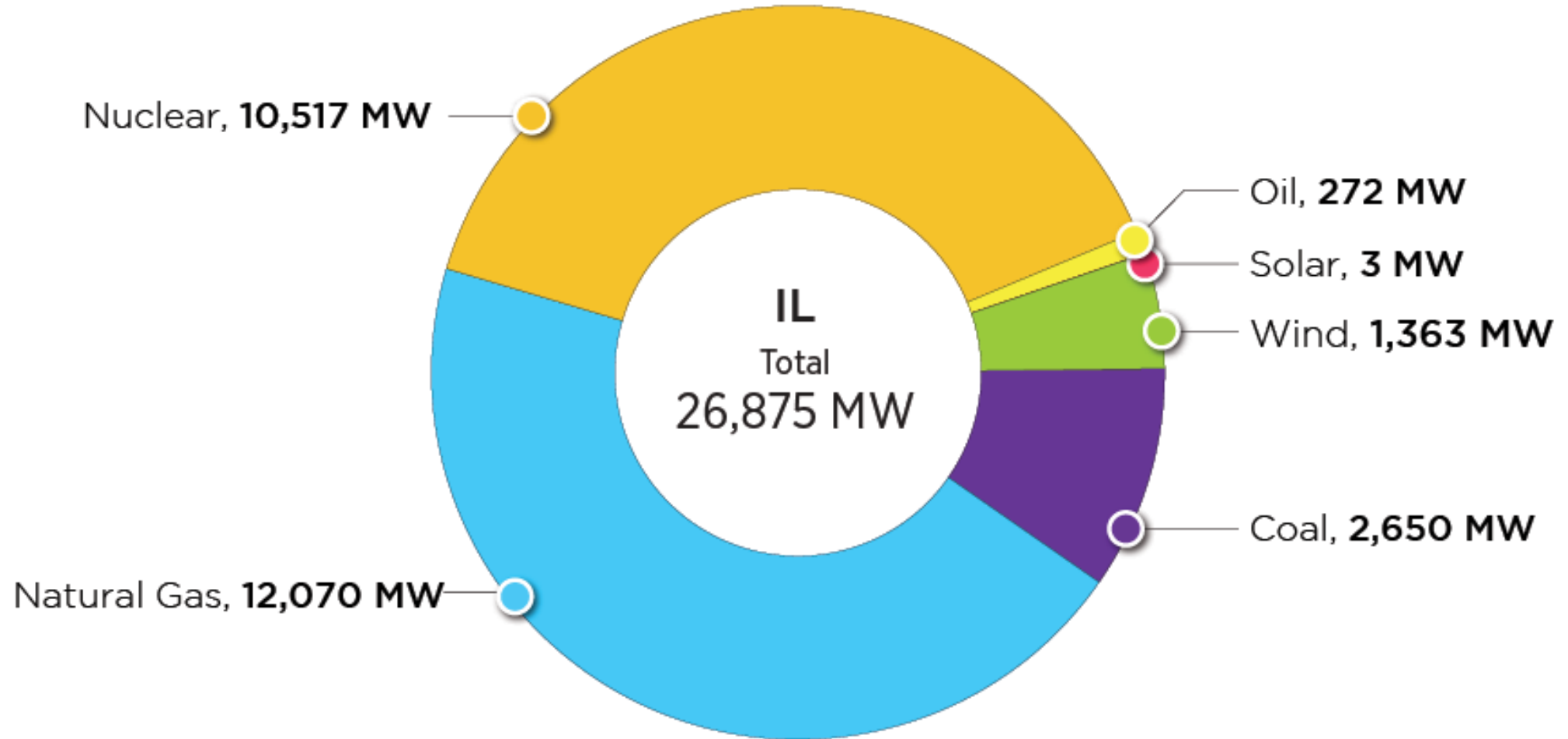
PJM Existing Installed Capacity Mix

(CIRs – as of Dec. 31, 2023)



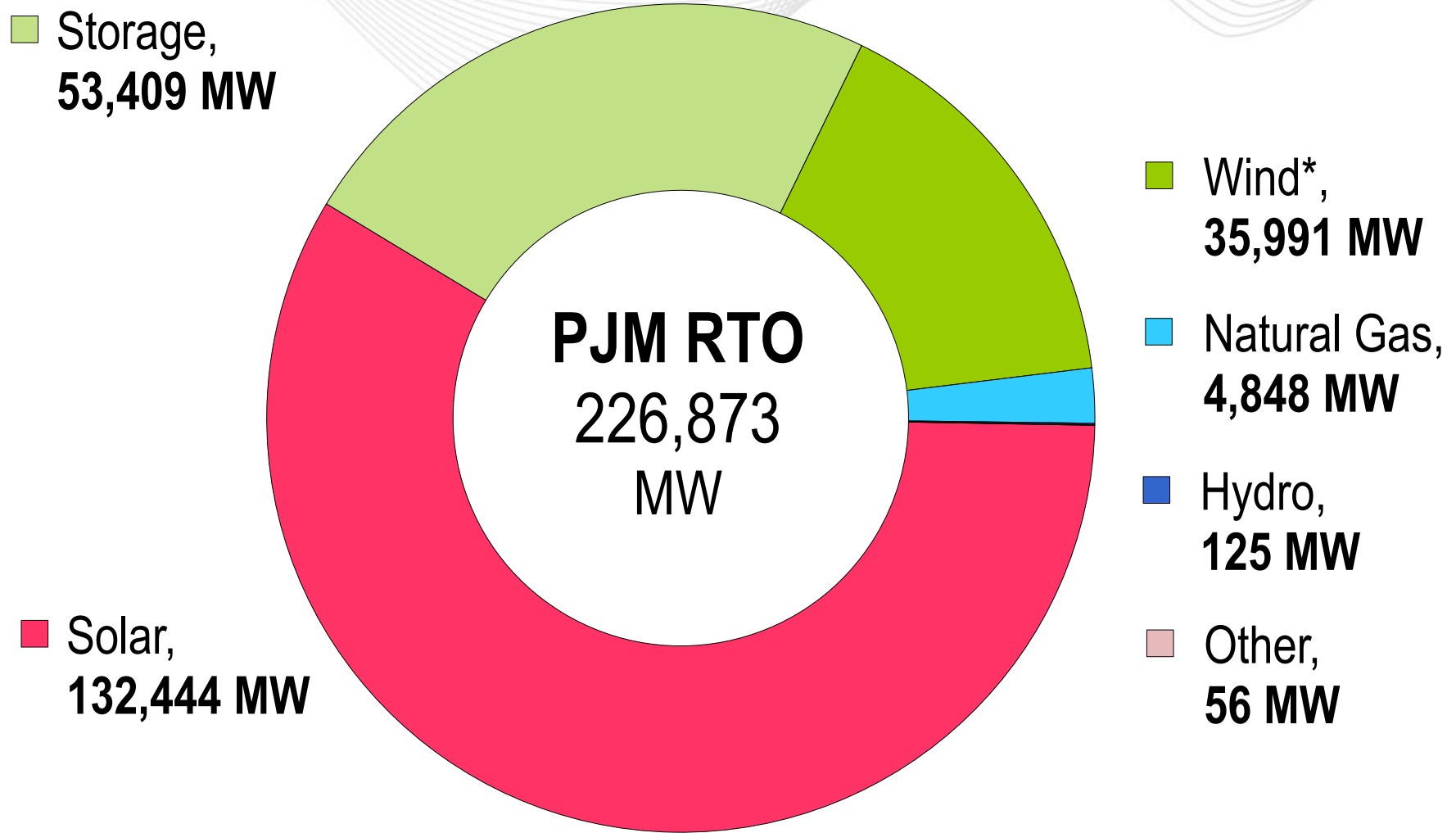
Illinois – Existing Installed Capacity (MW) by Fuel Type

(as of Dec. 31, 2023)



PJM Queued Capacity (Nameplate) by Fuel Type

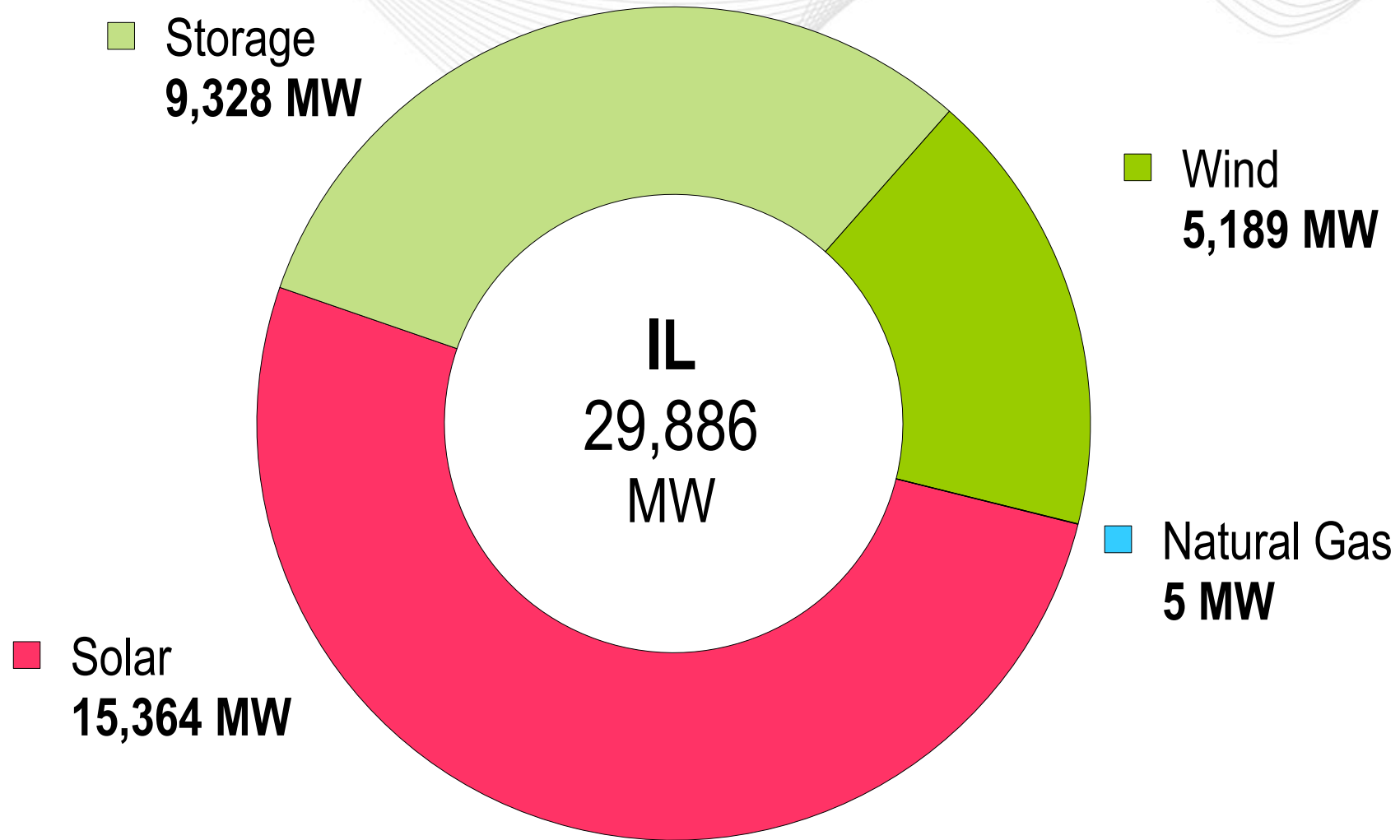
("Active" in the PJM Queue as of April 1, 2024)



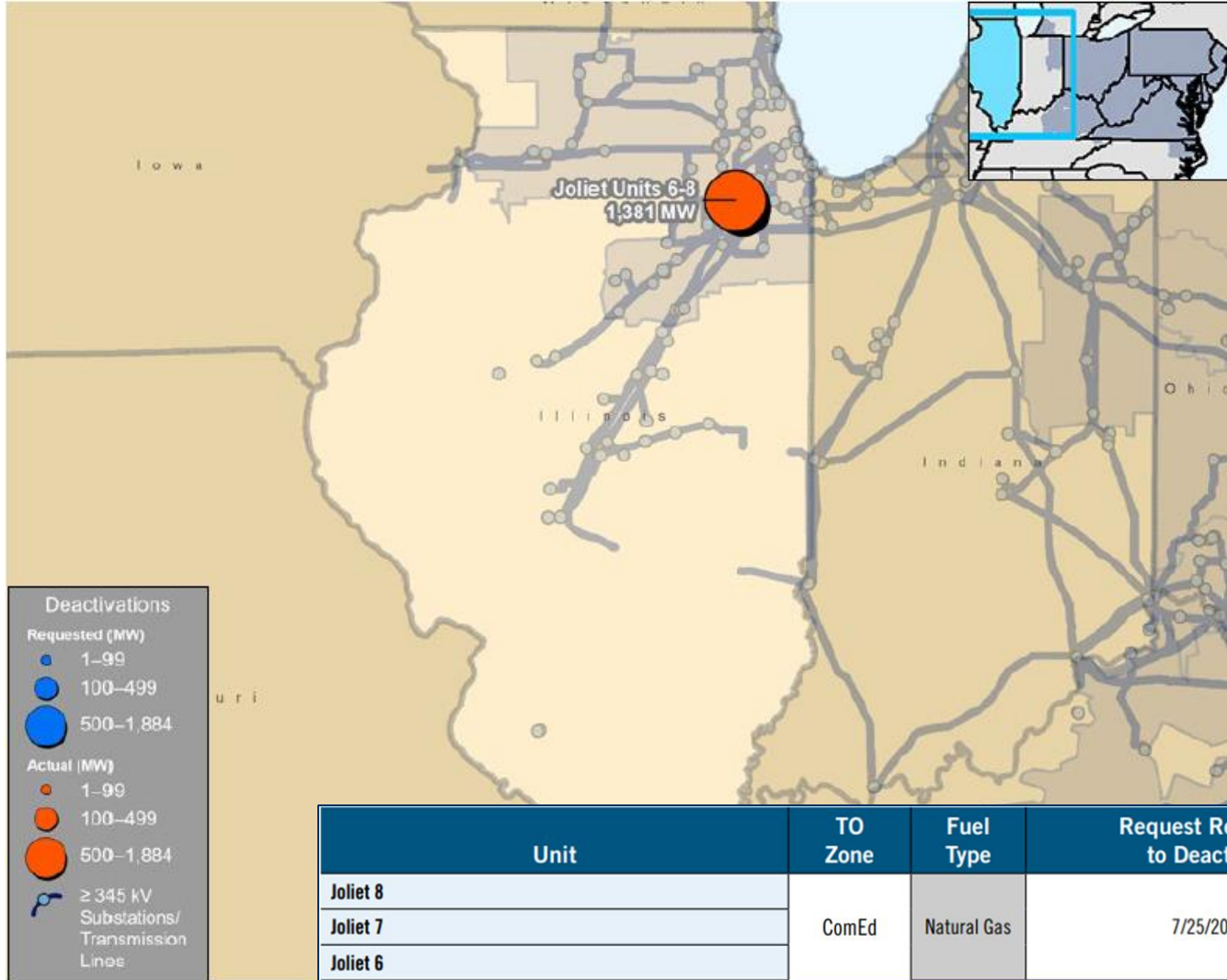
*Wind includes both onshore and offshore wind

Illinois Queued Capacity (Nameplate) by Fuel Type

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



Illinois – 2023 Generator Deactivations



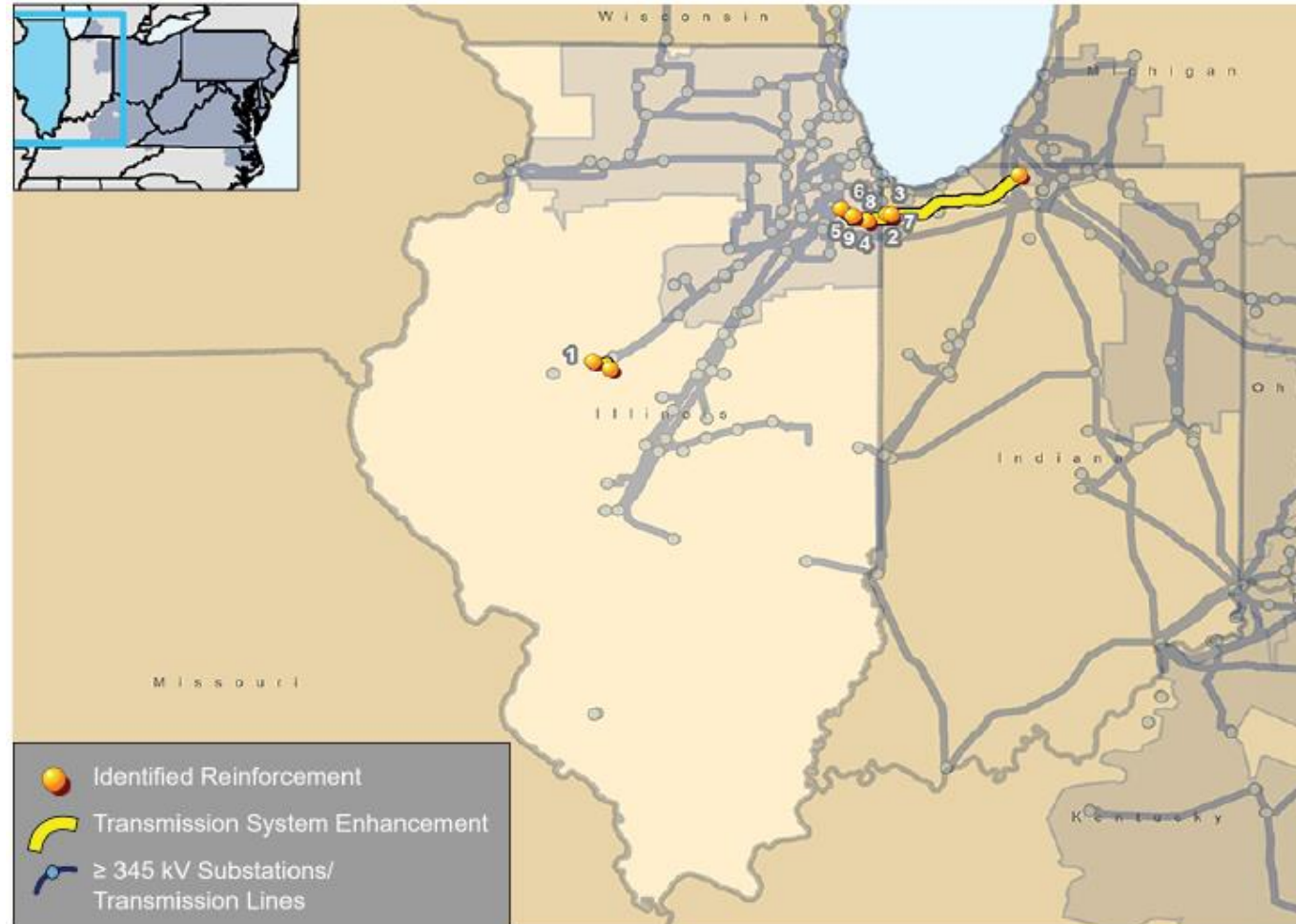
Planning

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.

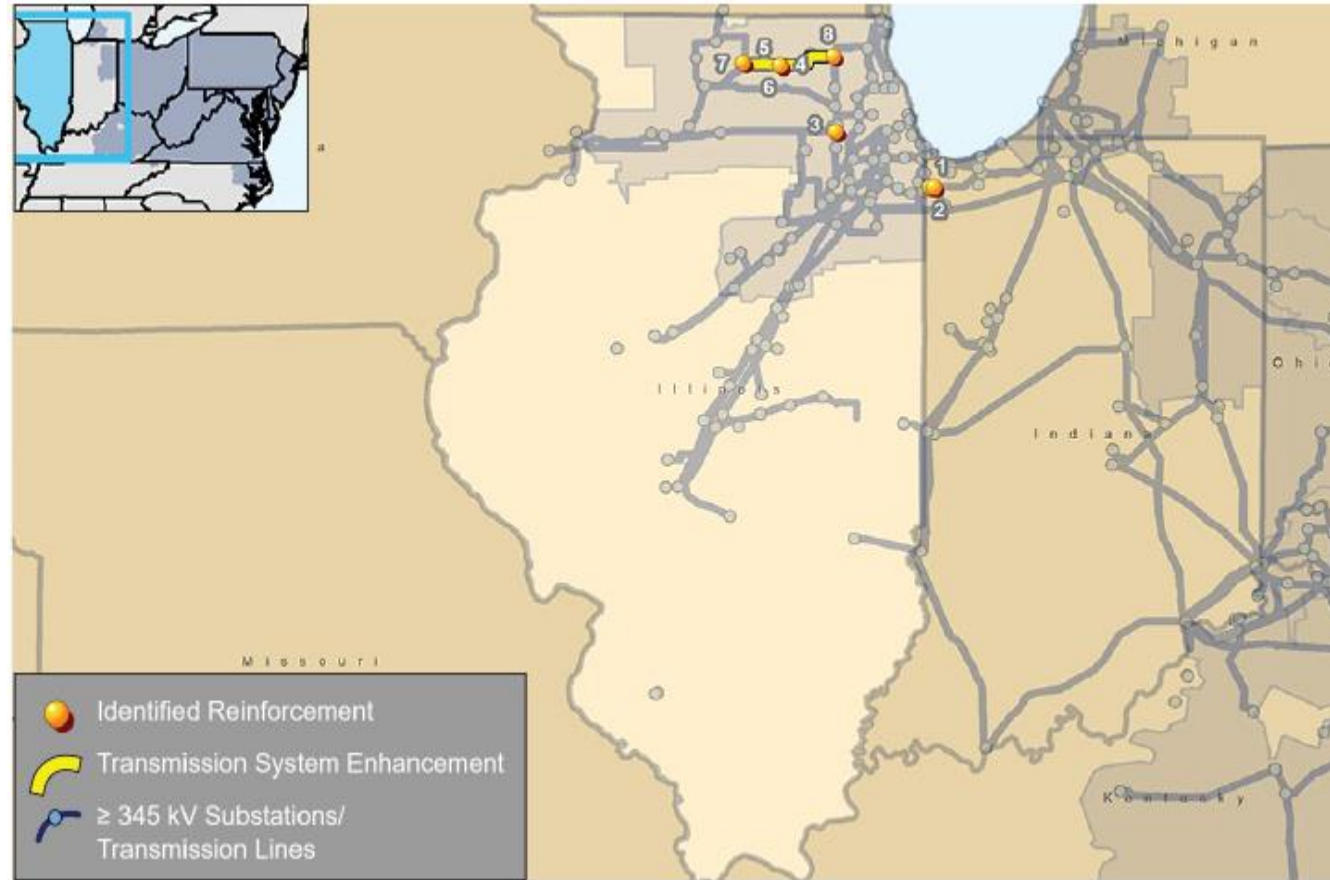
For a detailed list of each project shown on a state's project map, please see that state's section in the **2023 Annual RTEP Report** on PJM.com: <https://pjm.com/-/media/library/reports-notices/2023-rtep/2023-rtep-report.ashx>.

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>.



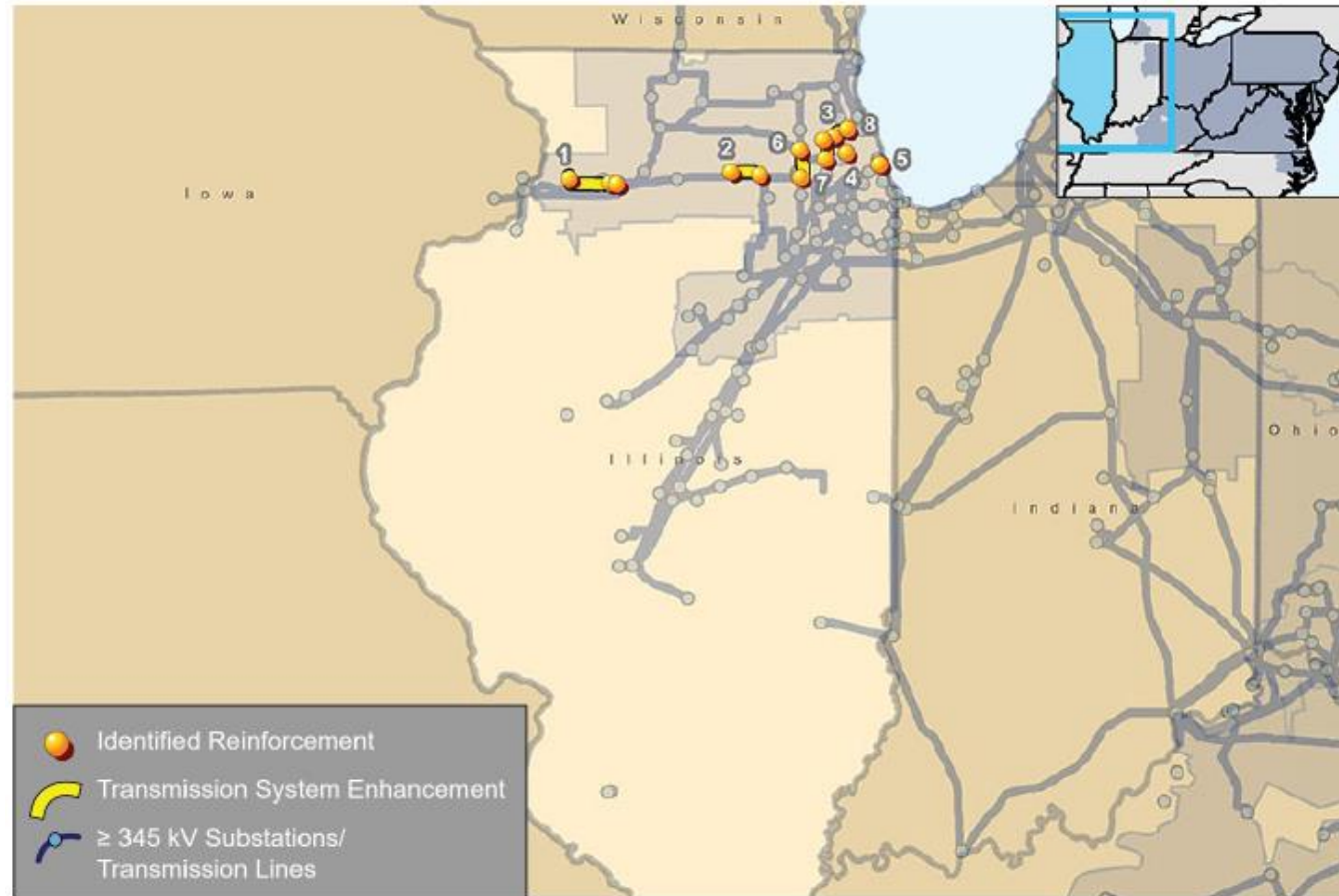
The 2023 RTEP has \$71.86 million in baseline projects located in Illinois.

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.



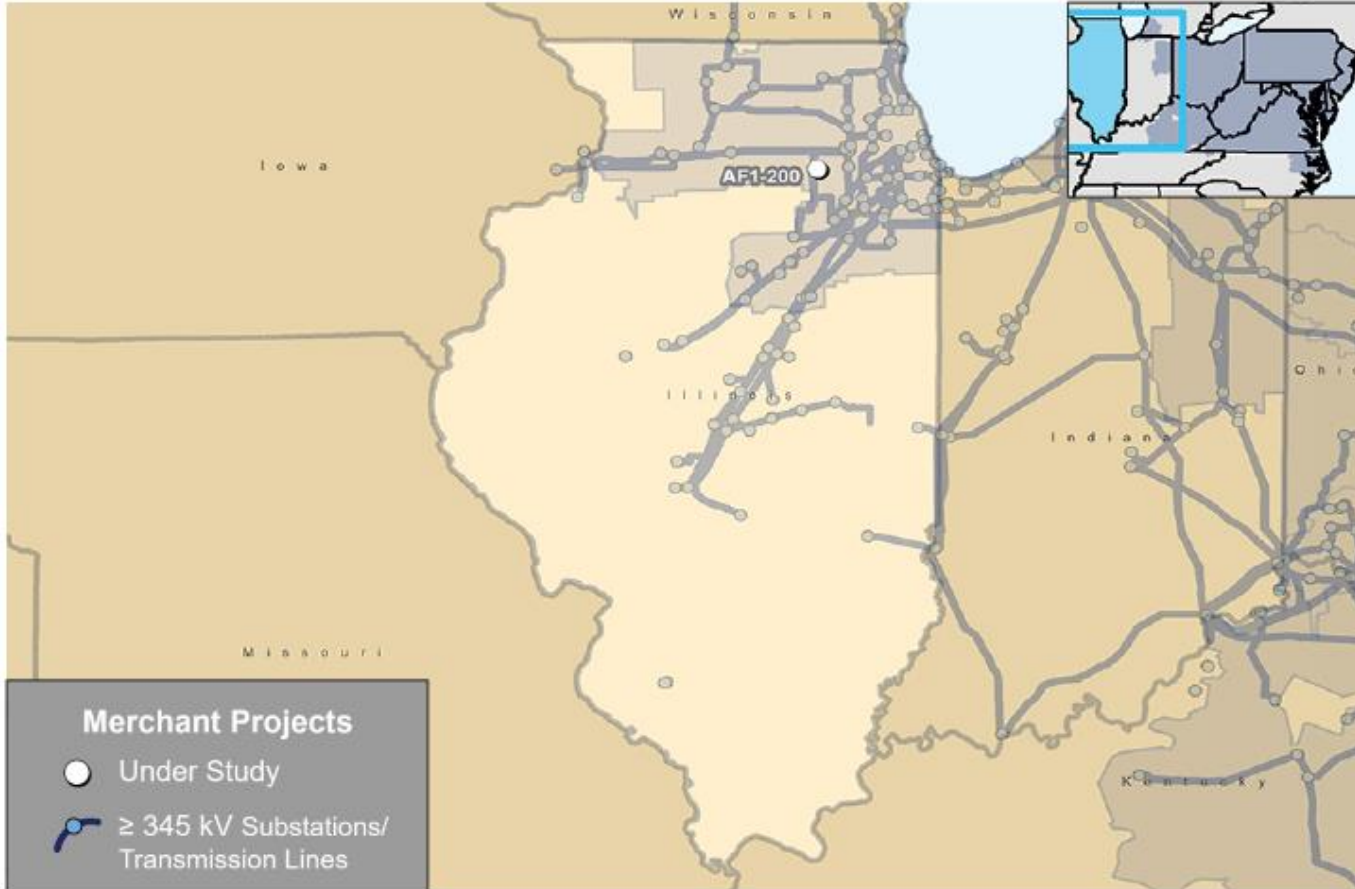
The 2023 RTEP has \$29.72 million in network upgrades located in Illinois.

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.



The 2023 RTEP has \$213.8 million in supplemental projects located in Illinois.

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.



| IL Merchant Transmission Projects | |
|-------------------------------------|--------------|
| Queue Number | AF1-200 |
| Queue Name | Plano 345 kV |
| To Zone | ComEd |
| Status | Active |
| Actual or Requested In-Service Date | 1/31/2025 |
| Maximum Output (MW) | 2,100 |

Planning Load Forecast



PJM Electricity Demand Growth

Load (MW)

195,000

185,000

175,000

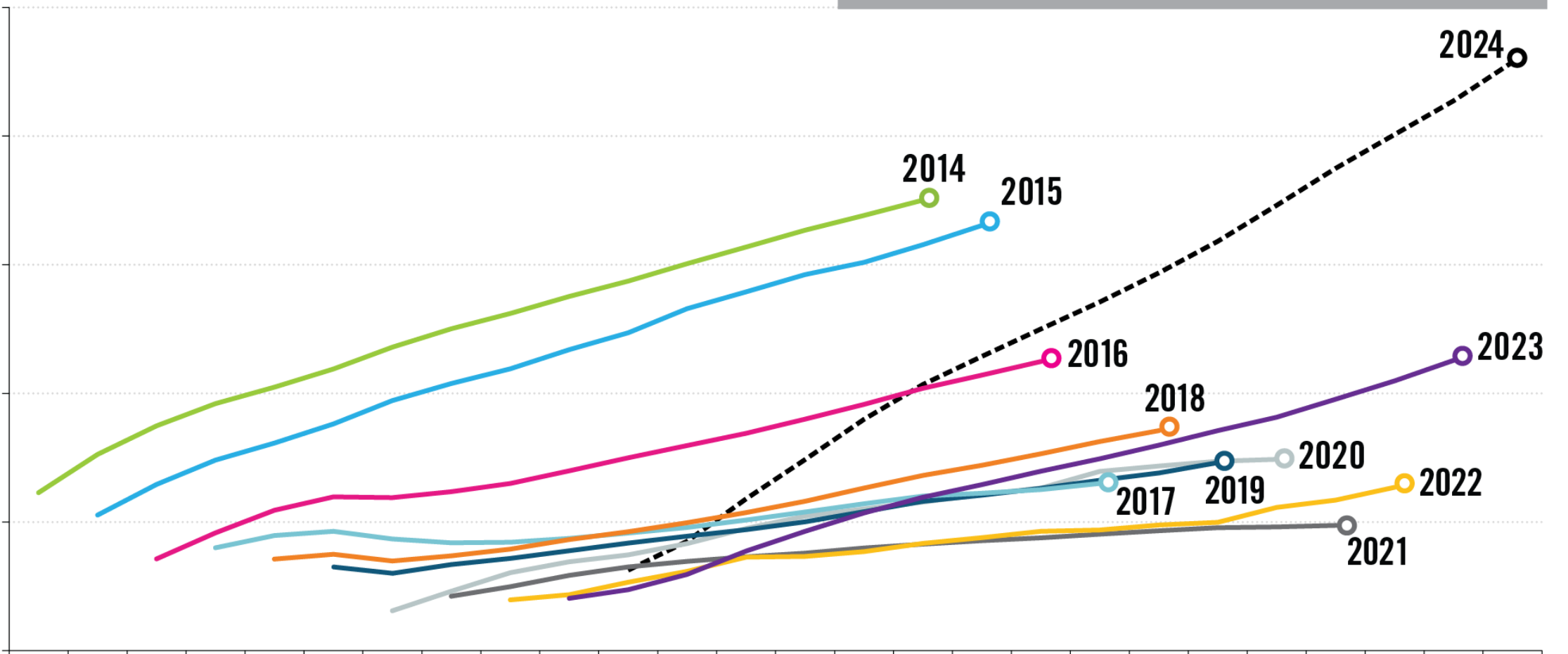
165,000

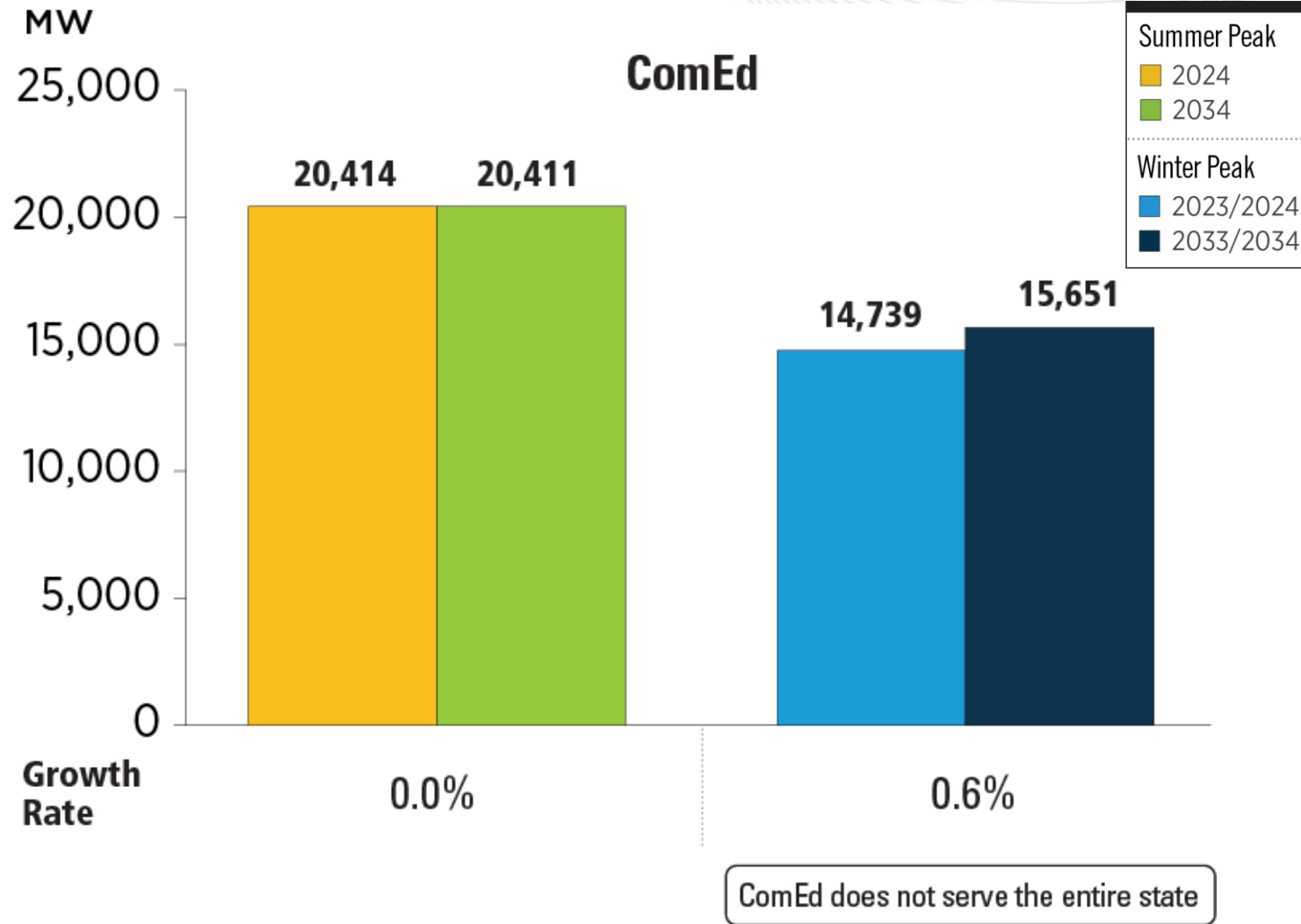
155,000

145,000

PJM RTO Summer Peak Demand Forecast

2015 2017 2019 2021 2023 2025 2027 2029 2031 2033 2035 2037 2039





PJM RTO Summer Peak

| 2024 | 2034 |
|---------------|---------------|
| 151,247 MW | 176,822 MW |

Growth Rate 1.6%

PJM RTO Winter Peak

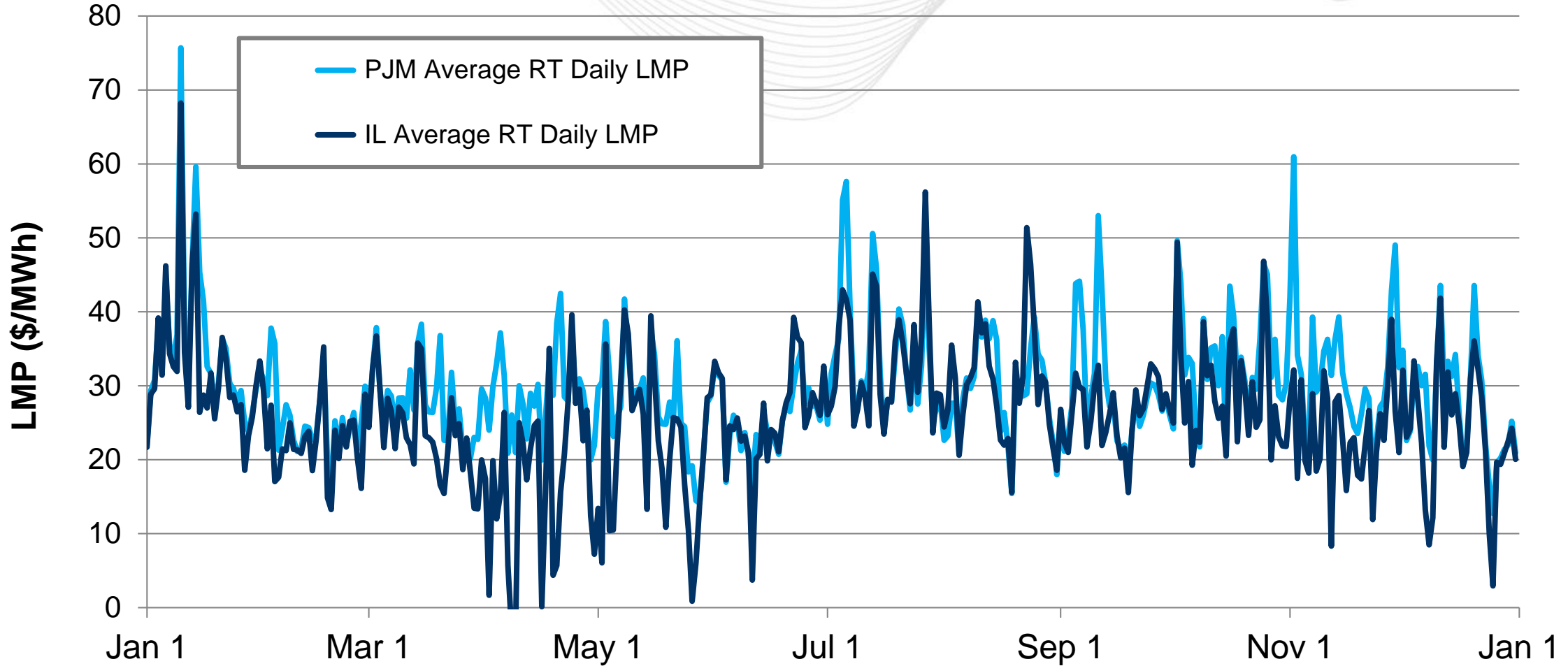
| 2023/2024 | 2033/2034 |
|---------------|---------------|
| 134,659 MW | 163,069 MW |

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.

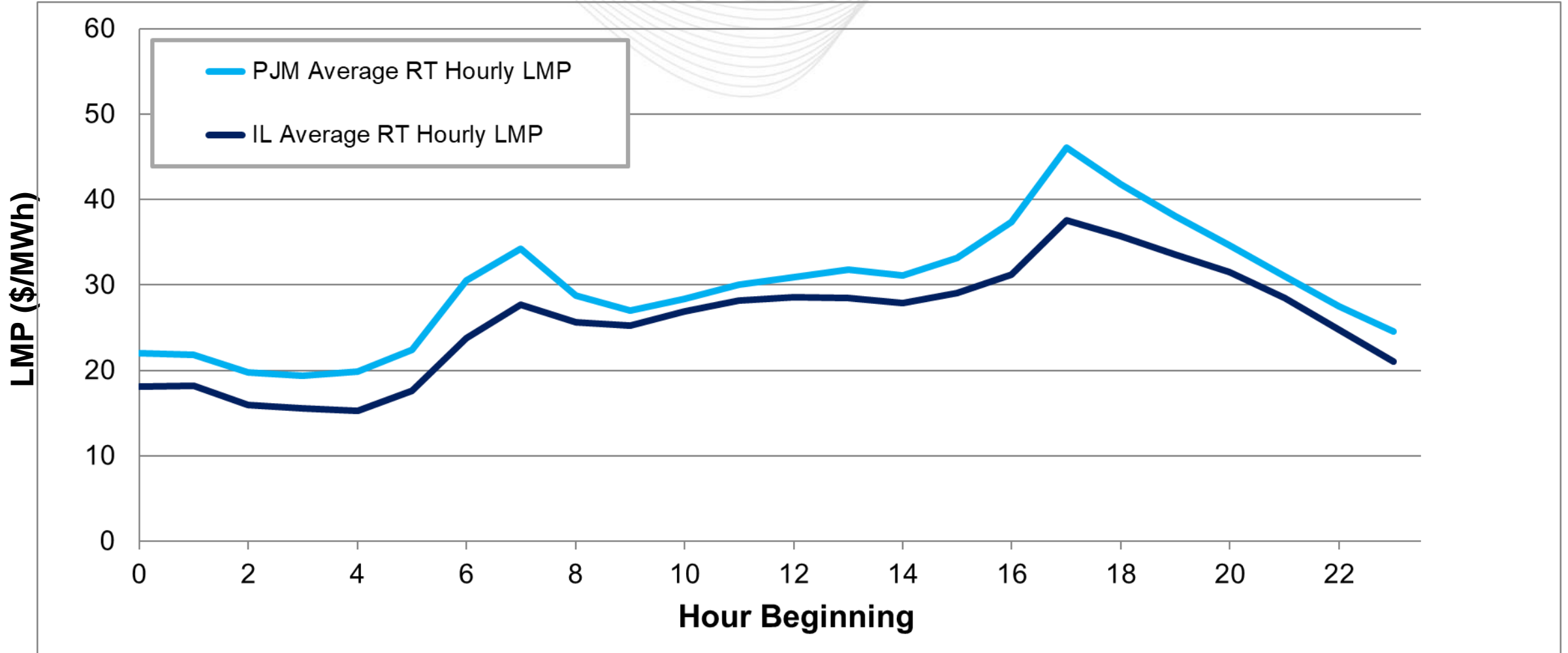
Markets

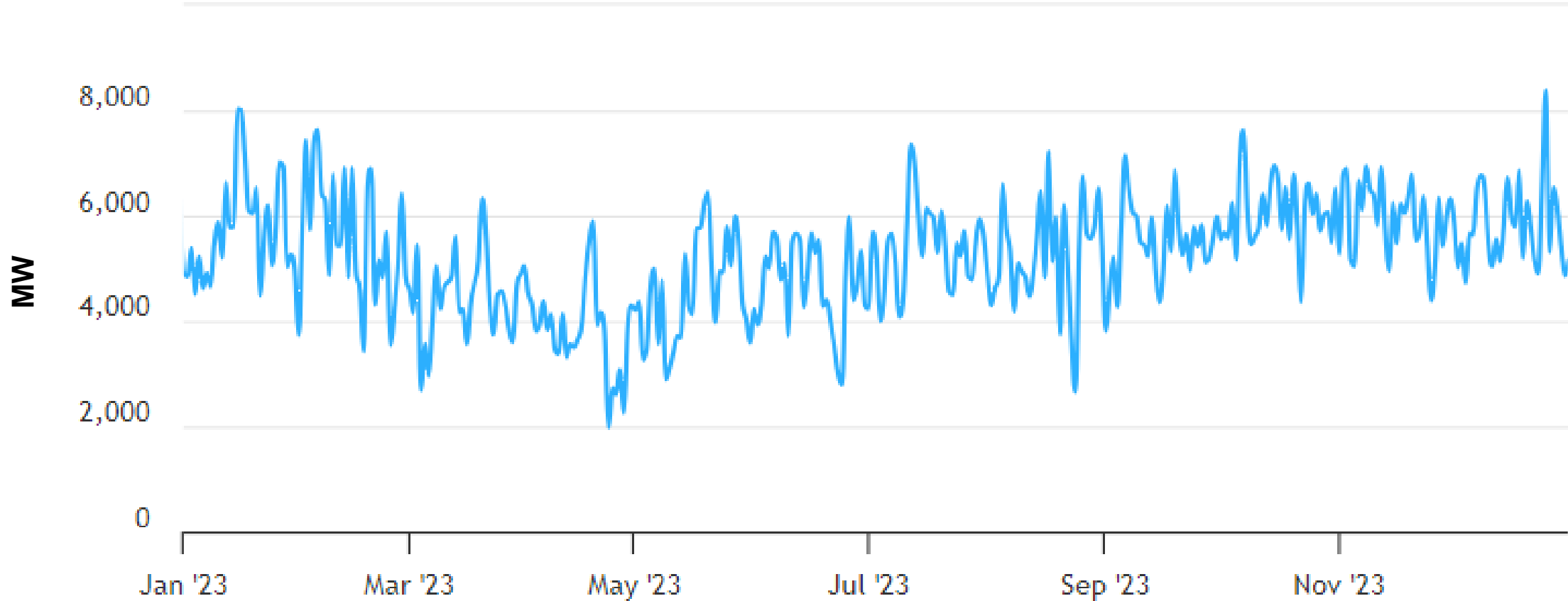
Market Analysis



NOTE: Illinois had negative average daily LMPs on April 8-9, 2023.

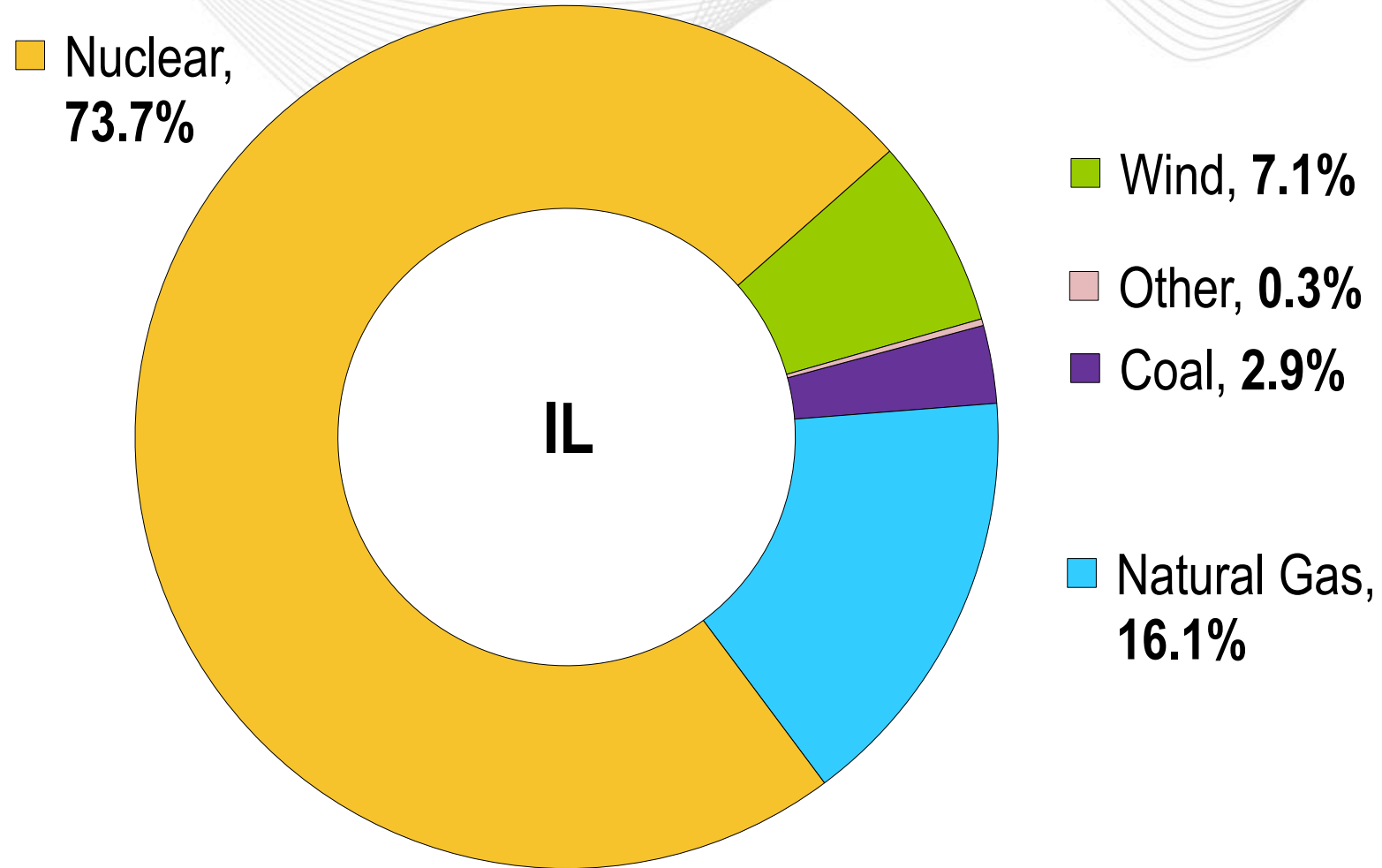
Illinois's average hourly LMPs were lower than the PJM average hourly LMP.





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

Operations



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

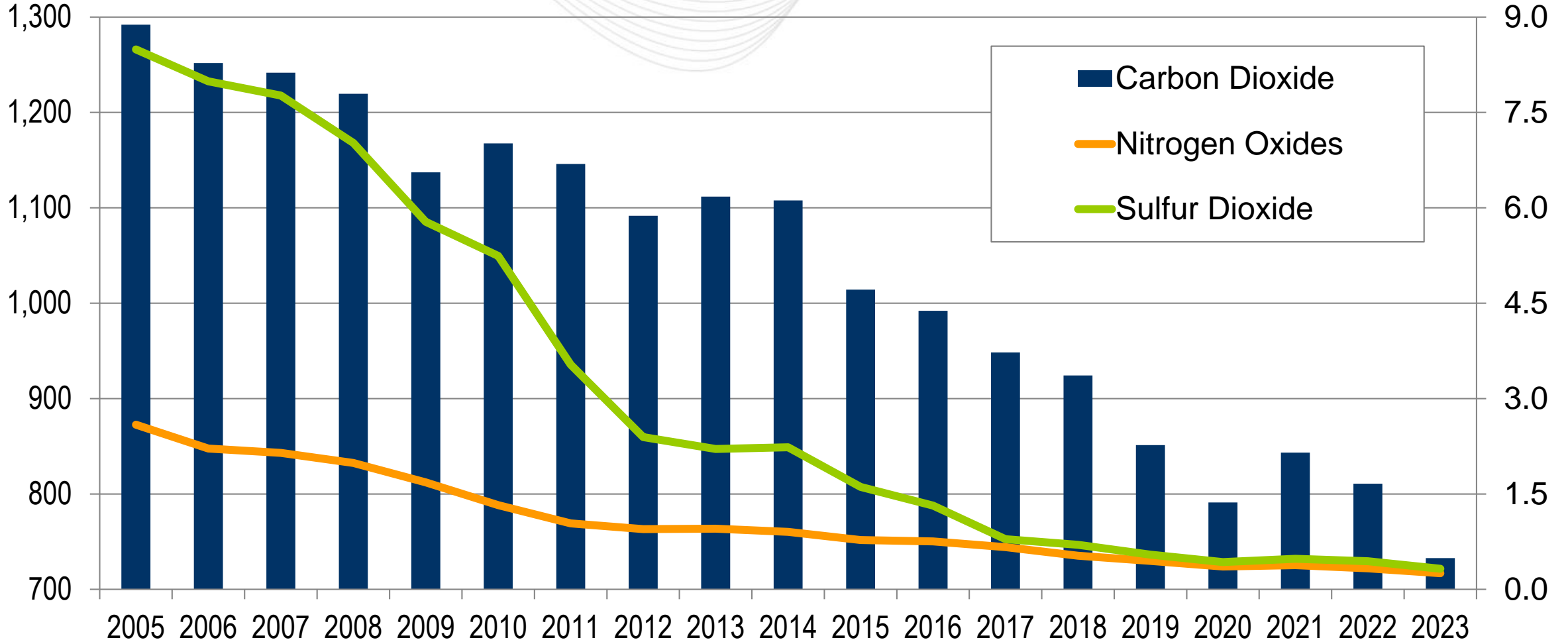


2005–2023 PJM Average Emissions

(March 2024)

CO₂
(lbs/MWh)

SO₂ and NO_x
(lbs/MWh)





Illinois – Average Emissions (lbs/MWh)

(March 2024)

CO₂
(lbs/MWh)

SO₂ and NO_x
(lbs/MWh)

