



2024 Kentucky State Infrastructure Report (January 1, 2024 – December 31, 2024)

June 2025

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

Planning

- Generation Portfolio Analysis
- Transmission Analysis
- Load Forecast

Markets

- Market Analysis
- 2025/26 Base Residual Auction
- Net Energy Import/Export Trend

Operations

- Generator Production
- Emissions Data

In the Kentucky service territory:



Existing Capacity:

- In the Kentucky portion of PJM, coal represents 53% of the total installed capacity while natural gas represents 43%.
- In PJM, natural gas, coal, and nuclear are 49%, 21%, and 18% of total installed capacity, respectively.



Interconnection Requests:

- Solar represents 75% of new interconnection requests while hybrid resources represents 13% of new requests.



Deactivations:

Kentucky had no generators deactivate or give a notice of deactivation in 2024.



RTEP 2024:

Kentucky's 2024 RTEP project total represents approximately \$216.55 million in investment.

In the Kentucky service territory:



Load Forecast:

Kentucky'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% to 0.4% percent, depending on the transmission zone.



Capacity Market:

Kentucky's service territory cleared at the RTO clearing price, \$269.92, for the 2025/2026 Base Residual Auction.



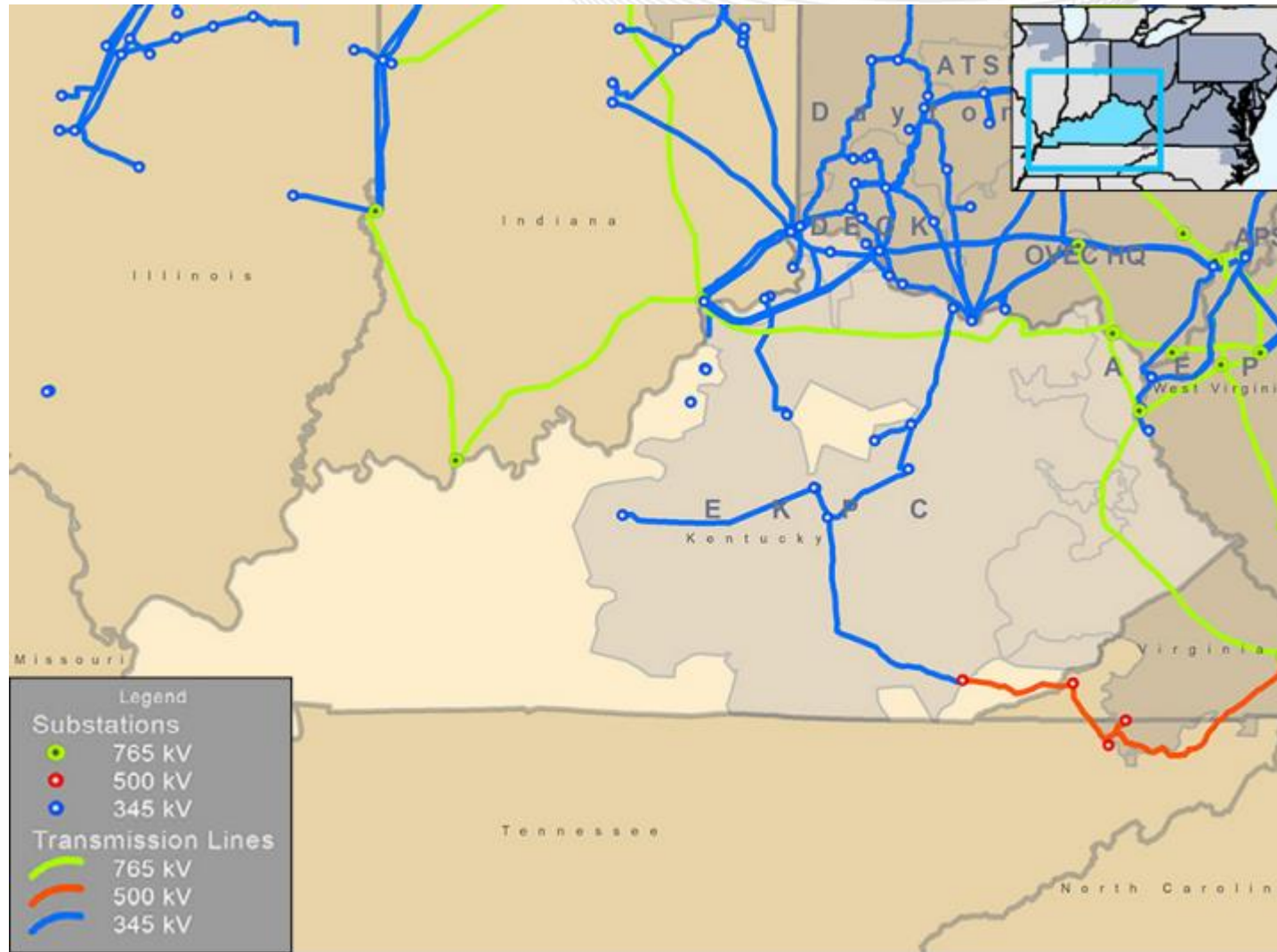
Market Performance:

Kentucky's average hourly LMPs were generally consistent with the PJM average hourly LMP.



Emissions:

Kentucky's average CO₂ emissions increased slightly in 2024 compared to 2023 levels.



The PJM service area in Kentucky is represented by the shaded portion of the map.

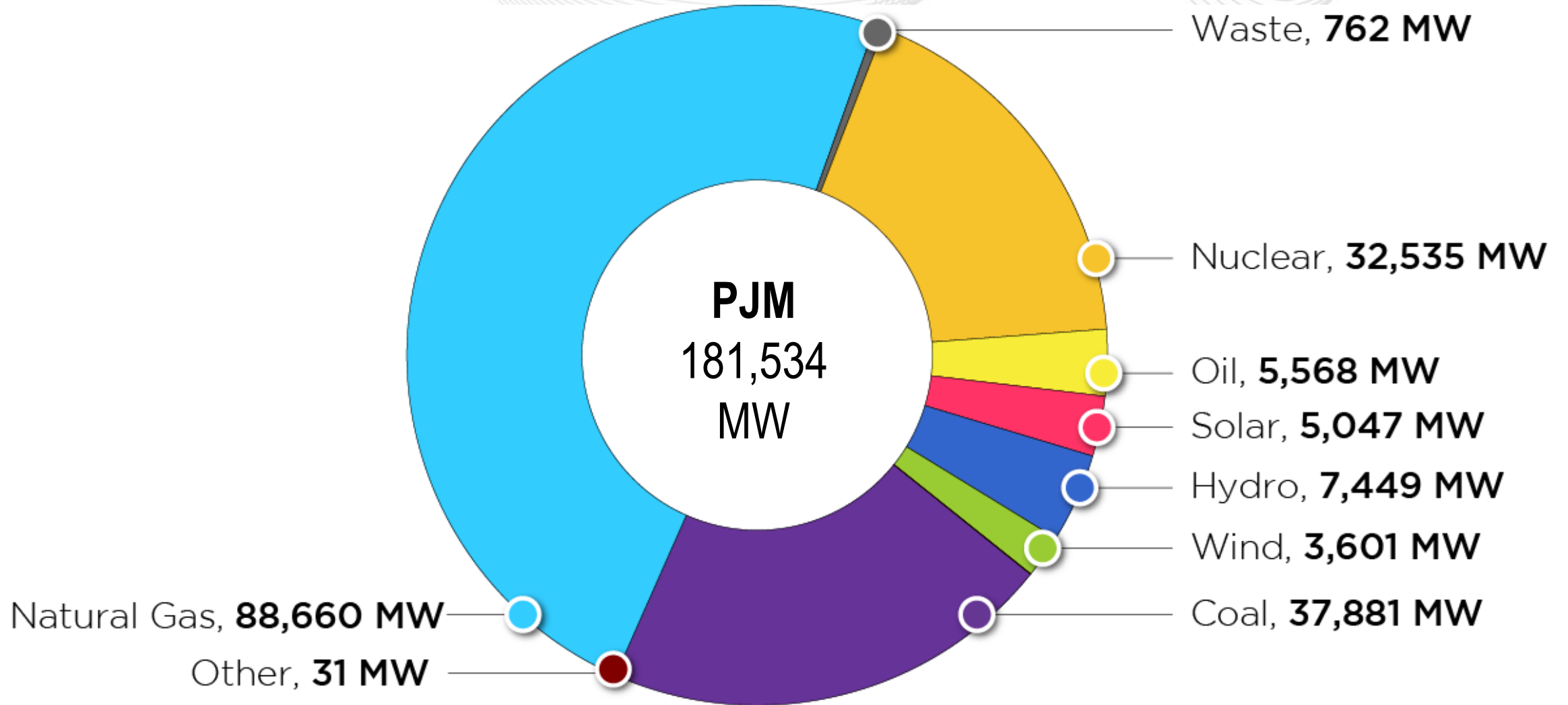
PJM operates transmission lines that extend beyond the service territory.

Planning

Generation Portfolio Analysis

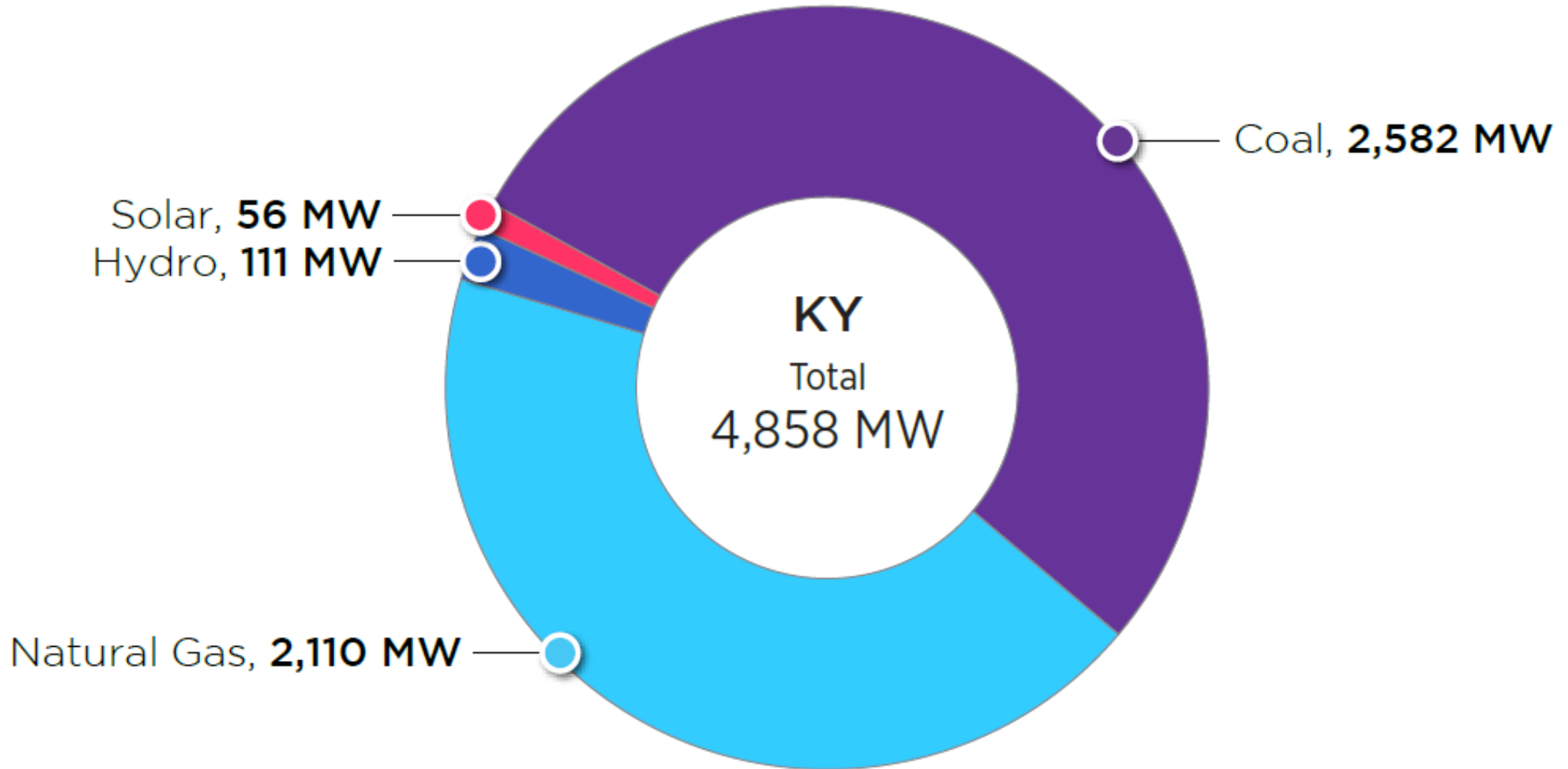
PJM Existing Installed Capacity Mix

(CIRs – as of Dec. 31, 2024)



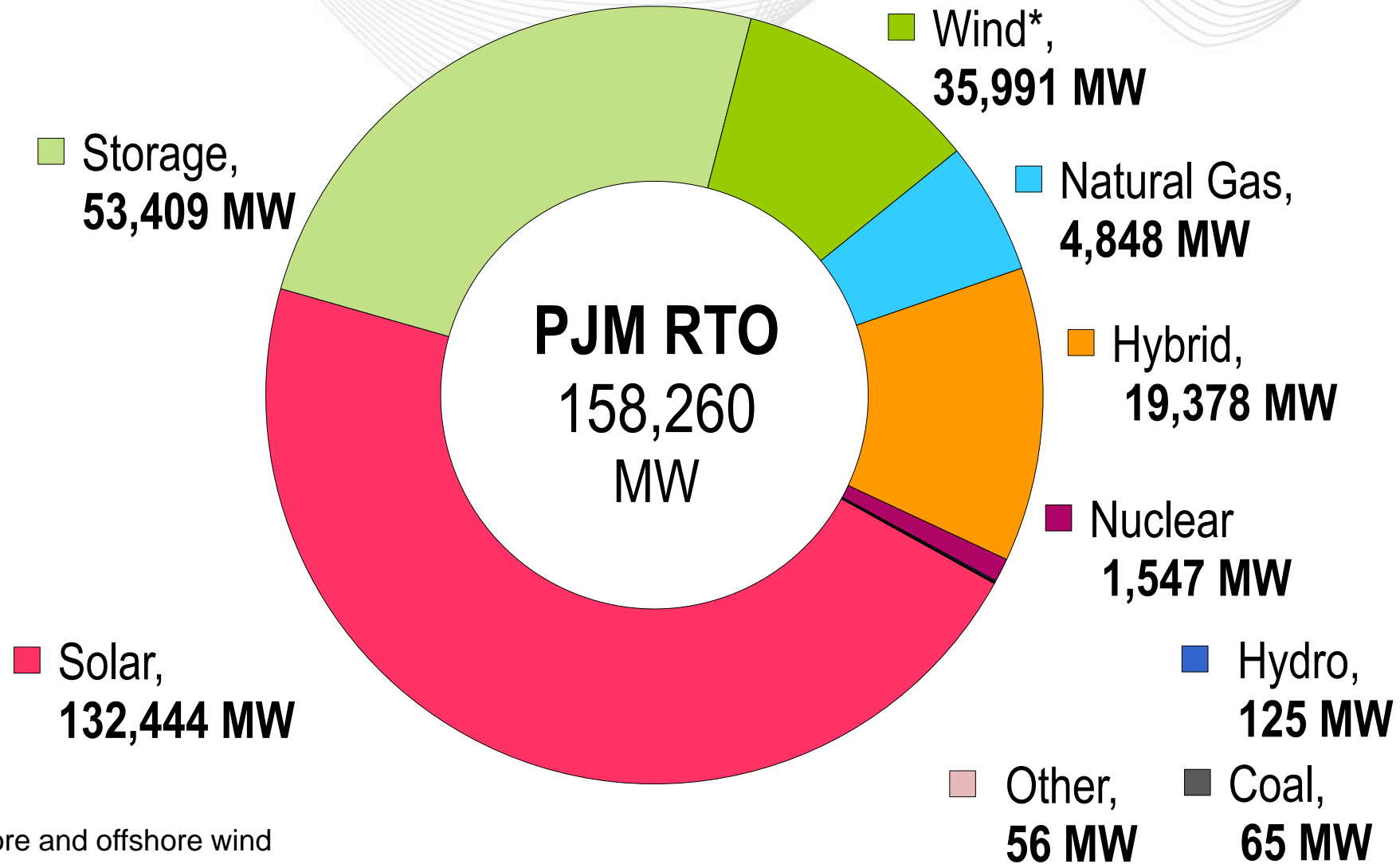
Kentucky – Existing Installed Capacity (MW) by Fuel Type

(CIRs- as of Dec. 31, 2024)



PJM Queued Capacity (Nameplate) by Fuel Type

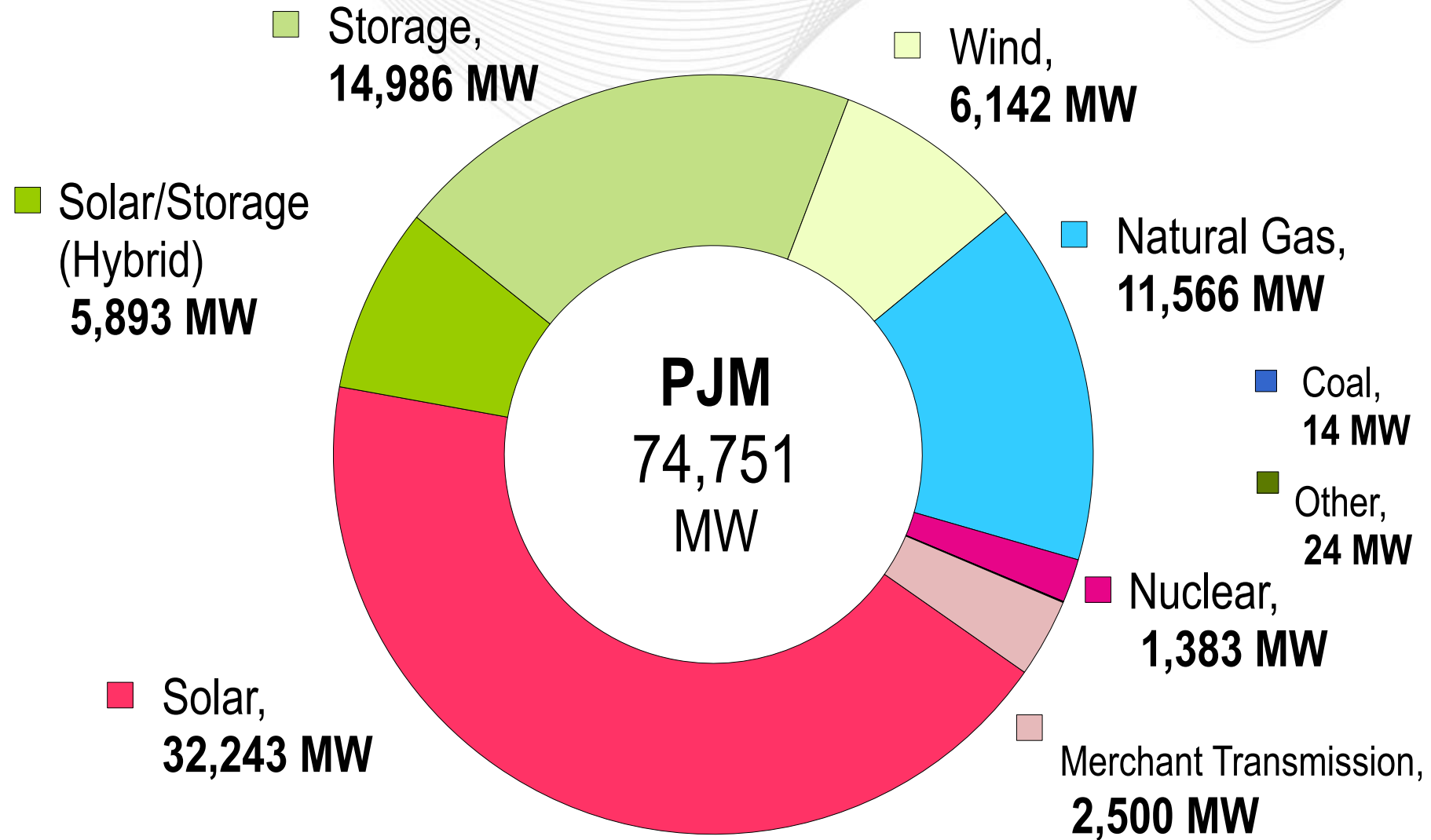
(All “Active” projects and projects with an interconnection agreement but not yet in service, as of May 7, 2025)



*Wind includes both onshore and offshore wind

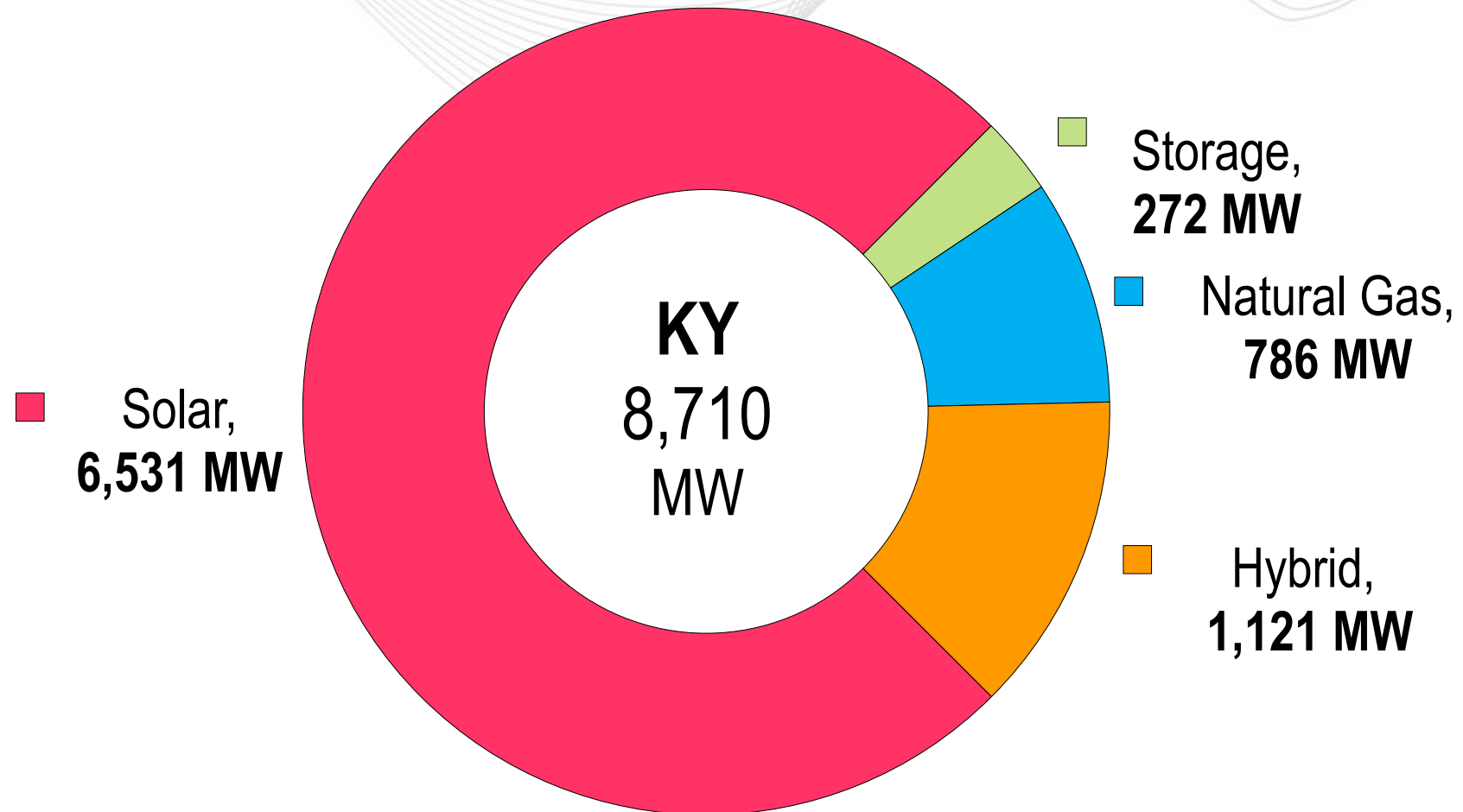
PJM Interconnection Queue Transition

Projects remaining in Transition Cycle 1 and Transition Cycle 2, including projects selected through the Reliability Resource Initiative
(June 2025)



Kentucky Queued Capacity (Nameplate) by Fuel Type

(All “Active” projects and projects with an interconnection agreement but not yet in service, as of May 7, 2025)



Kentucky – 2024 Generator Deactivations

Kentucky had no generators deactivate or give a notice of deactivation in 2024.

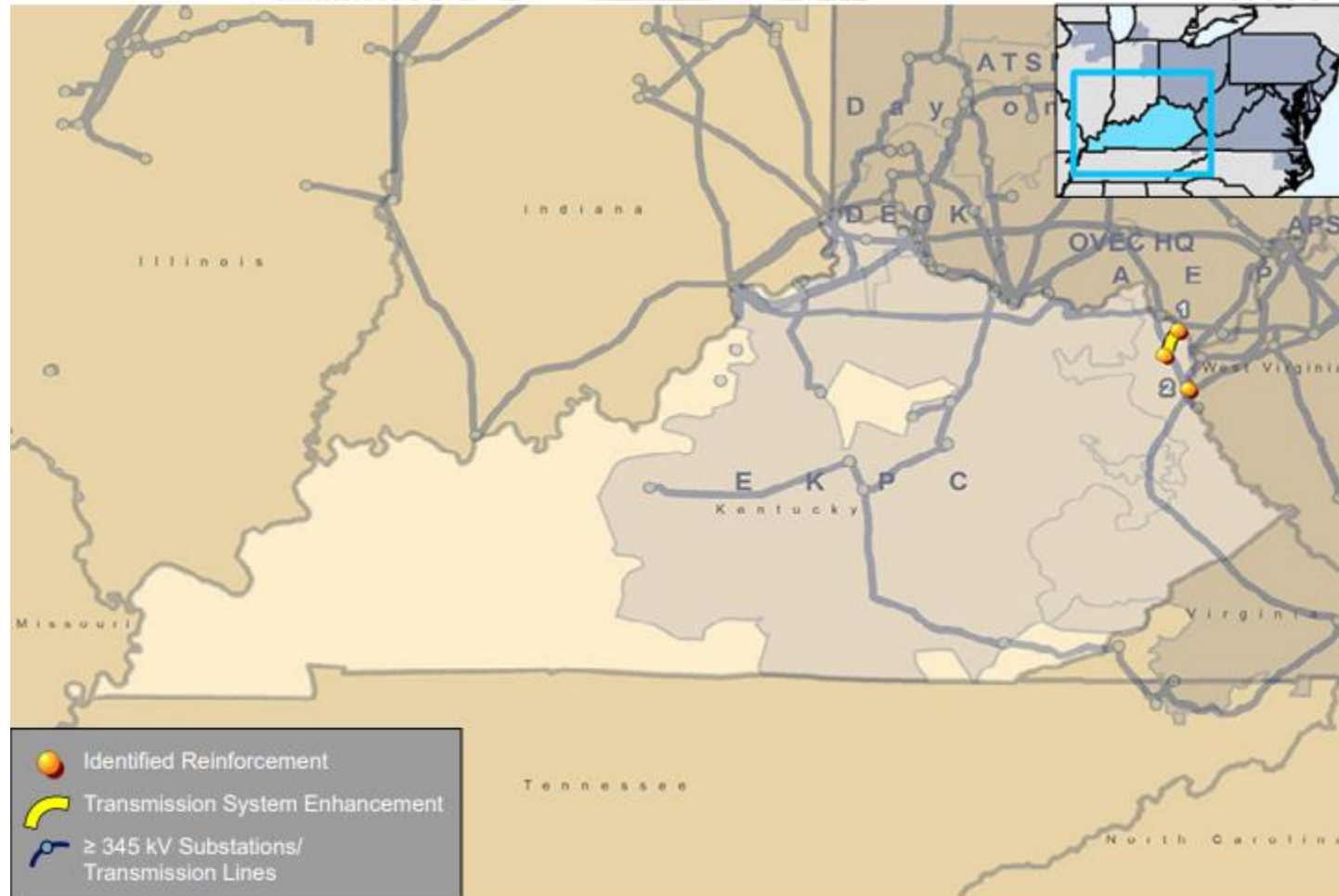
Planning

Transmission Infrastructure Analysis

For reporting purposes, the 2024 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 2024 Annual RTEP Report are not indicative of each project's cost allocation.

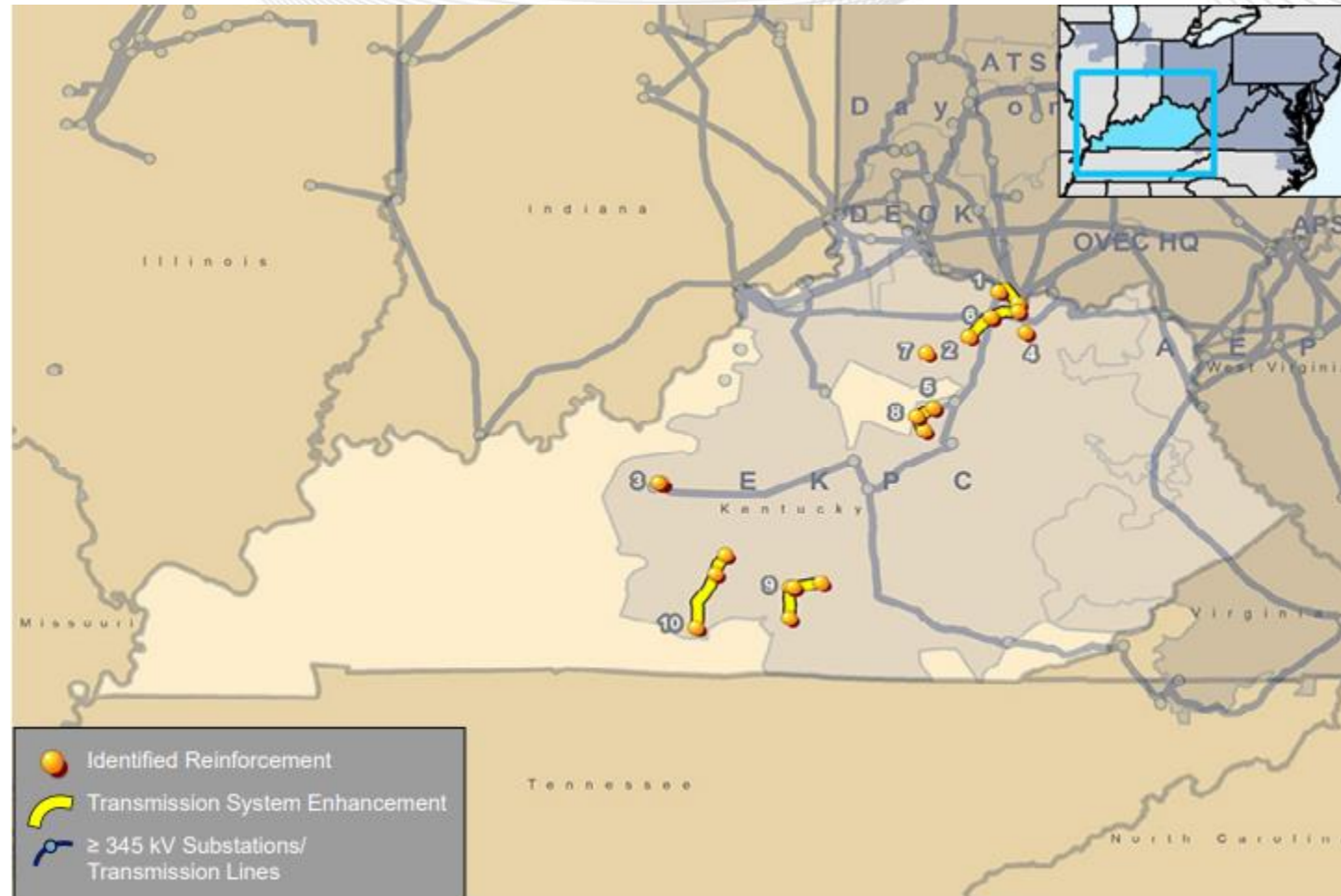
For a detailed list of each project shown on a state's project map, please see that state's section in the **2024 Annual RTEP Report** on PJM.com: <https://www.pjm.com/-/media/DotCom/library/reports-notices/2024-rtep/2024-rtep-report.pdf>

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>.



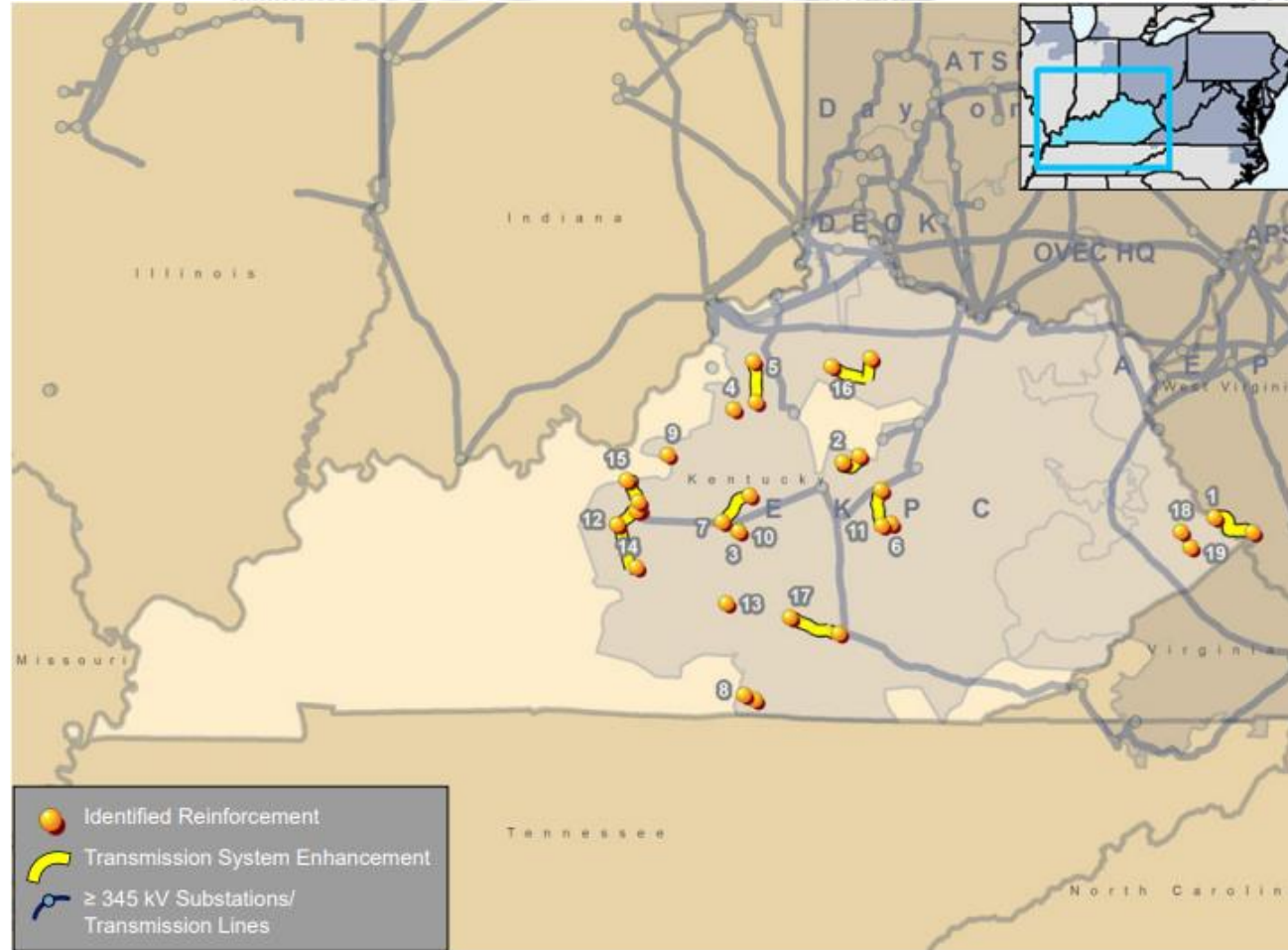
The 2024 RTEP has \$23.36 million in baseline projects located in Kentucky.

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 2024 RTEP has \$45.80 million in network projects located in Kentucky.

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.



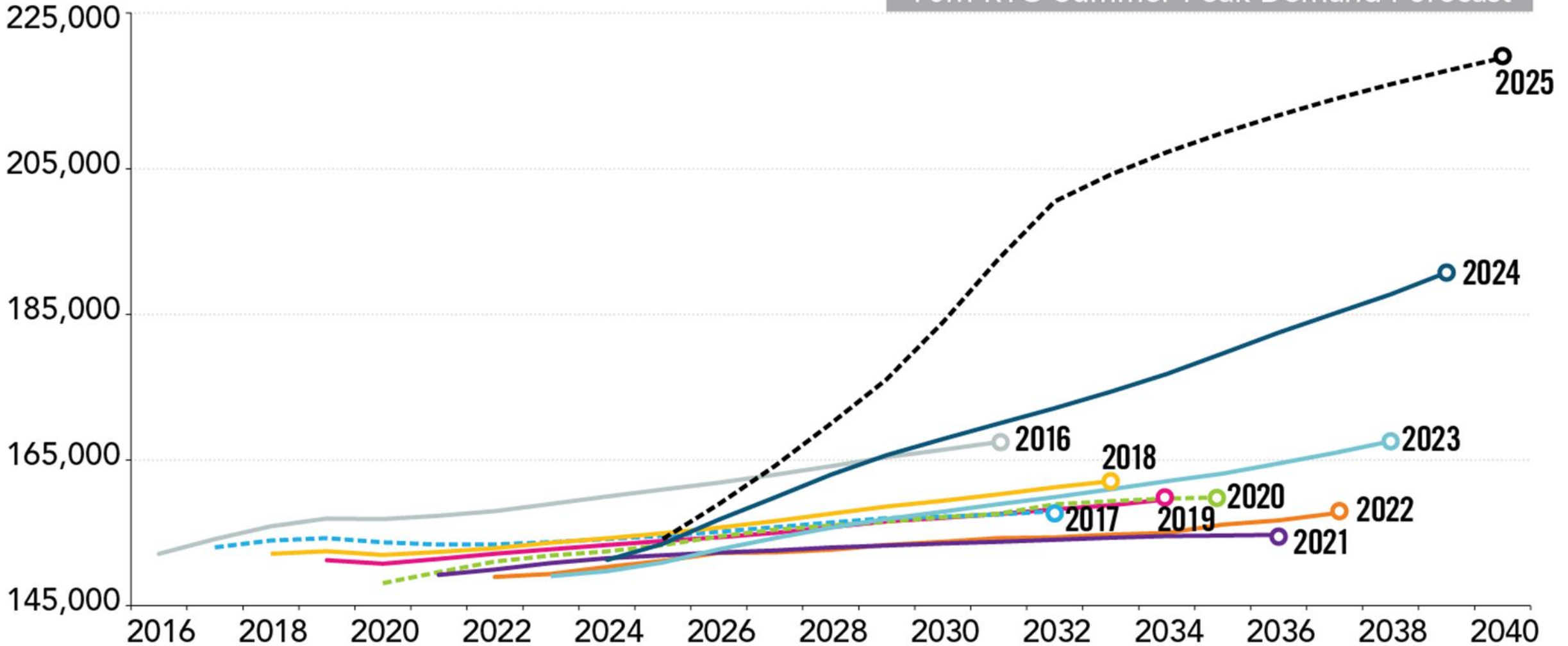
The 2024 RTEP has \$147.39 million in supplemental projects located in Kentucky.

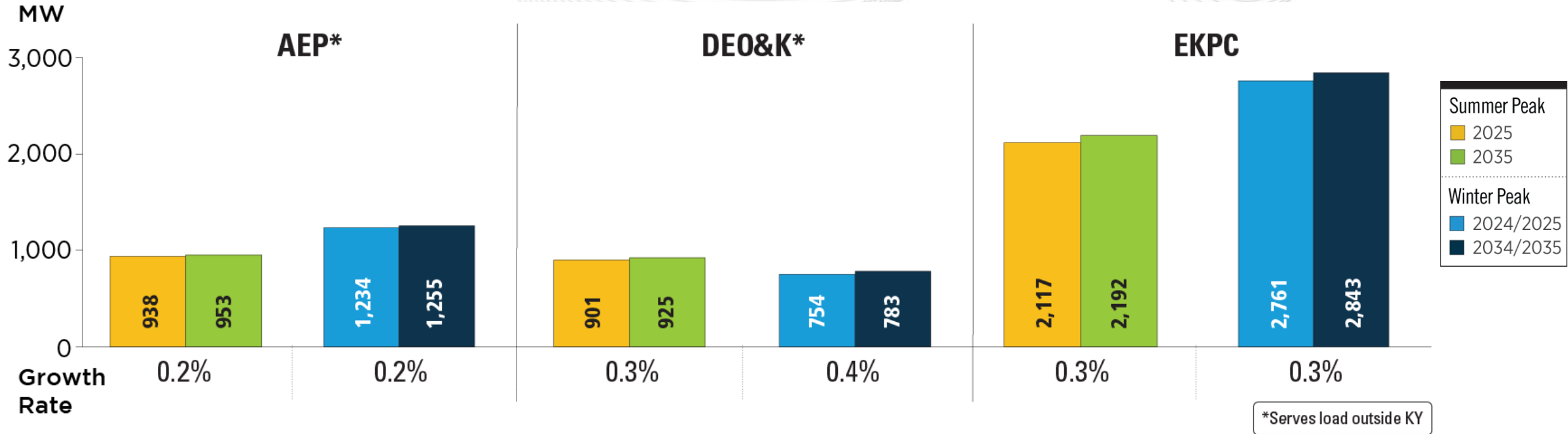
Note: Supplemental projects are transmission expansions or enhancements that are not required for compliance with PJM criteria and are not state public policy projects according to the PJM Operating Agreement. These projects are used as inputs to RTEP models, but are not required for reliability, economic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

Planning Load Forecast

Load (MW)

PJM RTO Summer Peak Demand Forecast





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.

PJM RTO Summer Peak

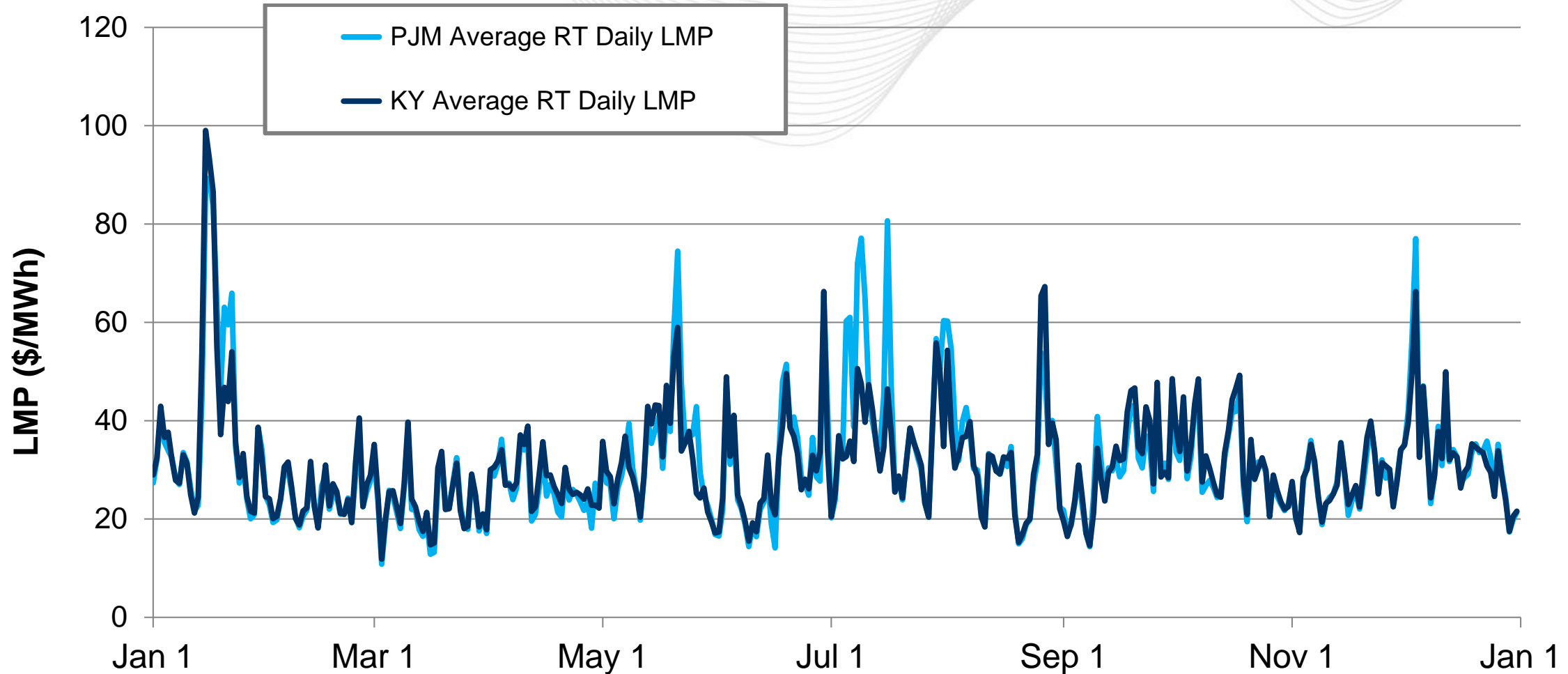
2025	2035
154,144 MW	209,923 MW
Growth Rate 3.1%	

PJM RTO Winter Peak

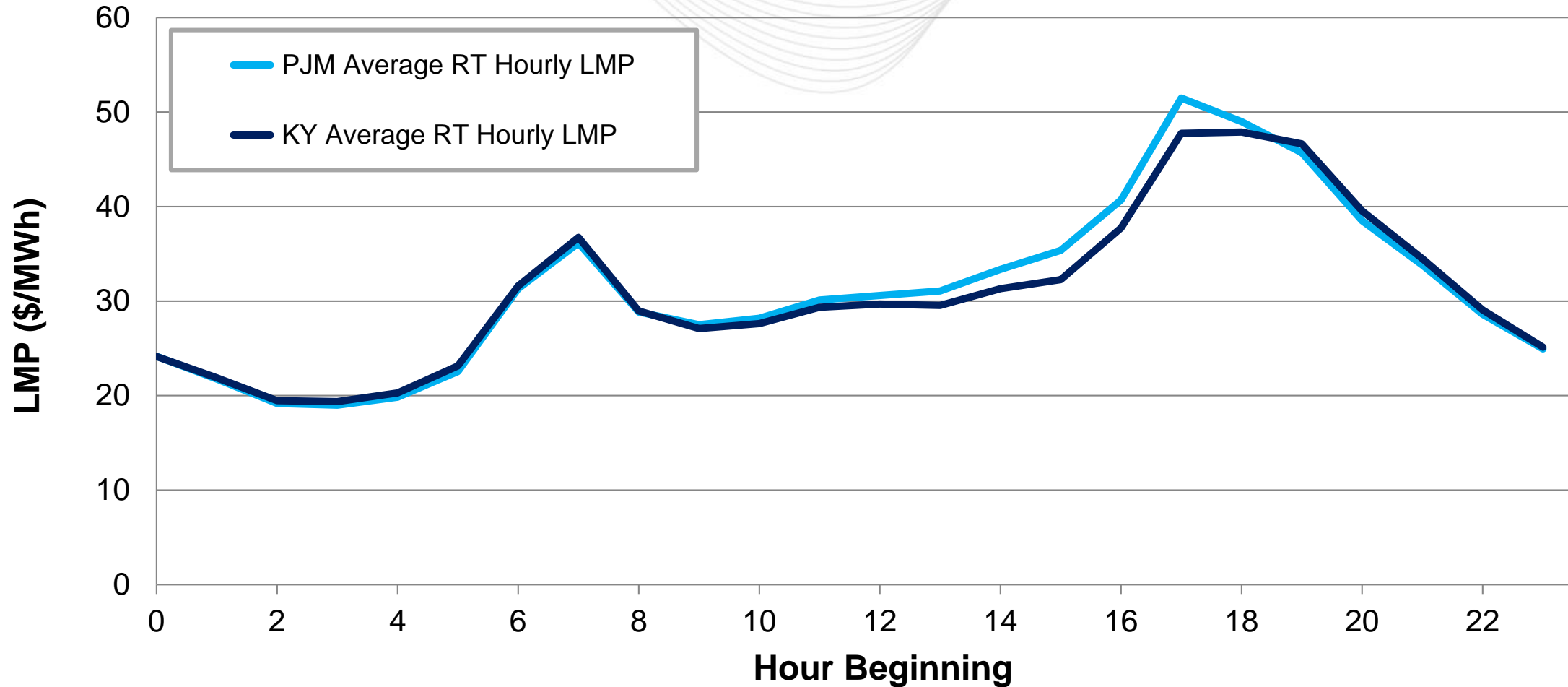
2024/2025	2034/2035
136,127 MW	198,175 MW
Growth Rate 3.8%	

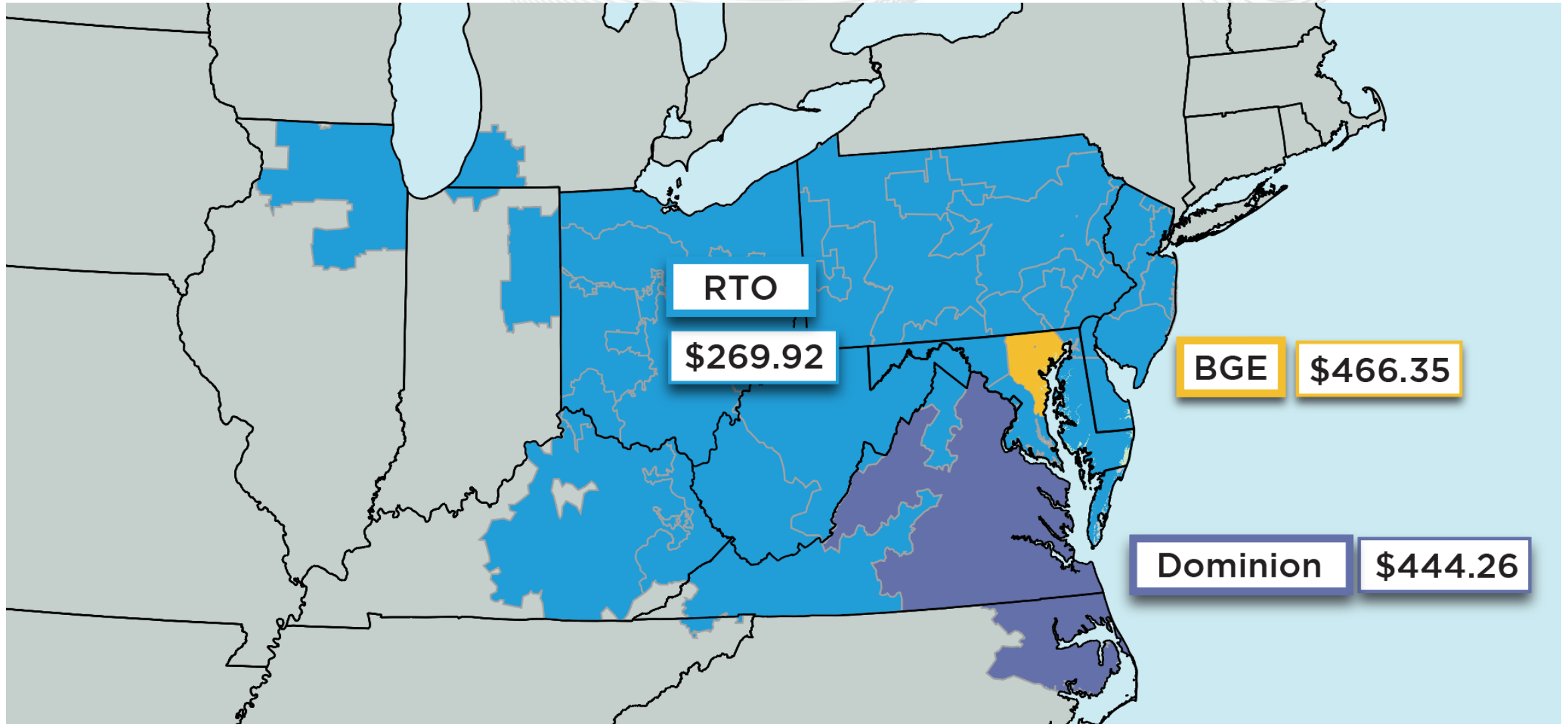
Markets

Market Analysis



Kentucky's average hourly LMPs were consistent with the PJM average hourly LMP and slightly lower during peak hours.





2025/2026 BRA Final Clearing Prices and MW Quantities

(Unforced Capacity)

LDA	Offered MW*	Cleared MW**	Clearing Price
DOM	20,100.2	20,049.6	\$444.26
BGE	612.9	606.9	\$466.35
RTO	137,152.1	135,684.0	\$269.92

* Offered MW values include Annual, Summer-Period, and Winter-Period Capacity Performance sell offers.

** Cleared MW values include Annual and matched Seasonal Capacity Performance sell offers within the LDA.

Locational Price Adder is with respect to the immediate parent LDA

2025/2026 Cleared MW (UCAP) by Resource Type

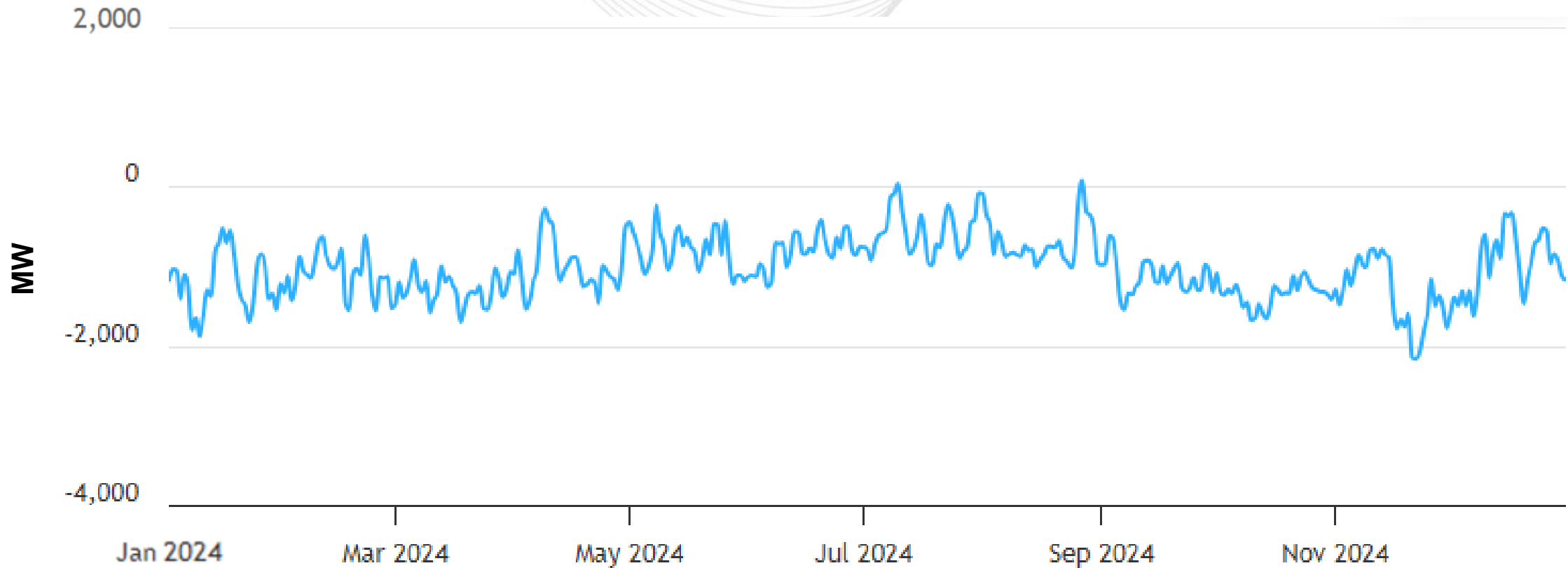
CAPACITY PERFORMANCE

Cleared MW (UCAP)

Resource Type	ANNUAL	SUMMER	WINTER
Generation	128,114.5	45.0	448.0
DR	5,942.4	122.3	-
EE	1,179.1	280.7	-
PRD	210.2	-	-
Total (MW)	135,446.2	448.0	448.0

Kentucky – Net Energy Import/Export Trend

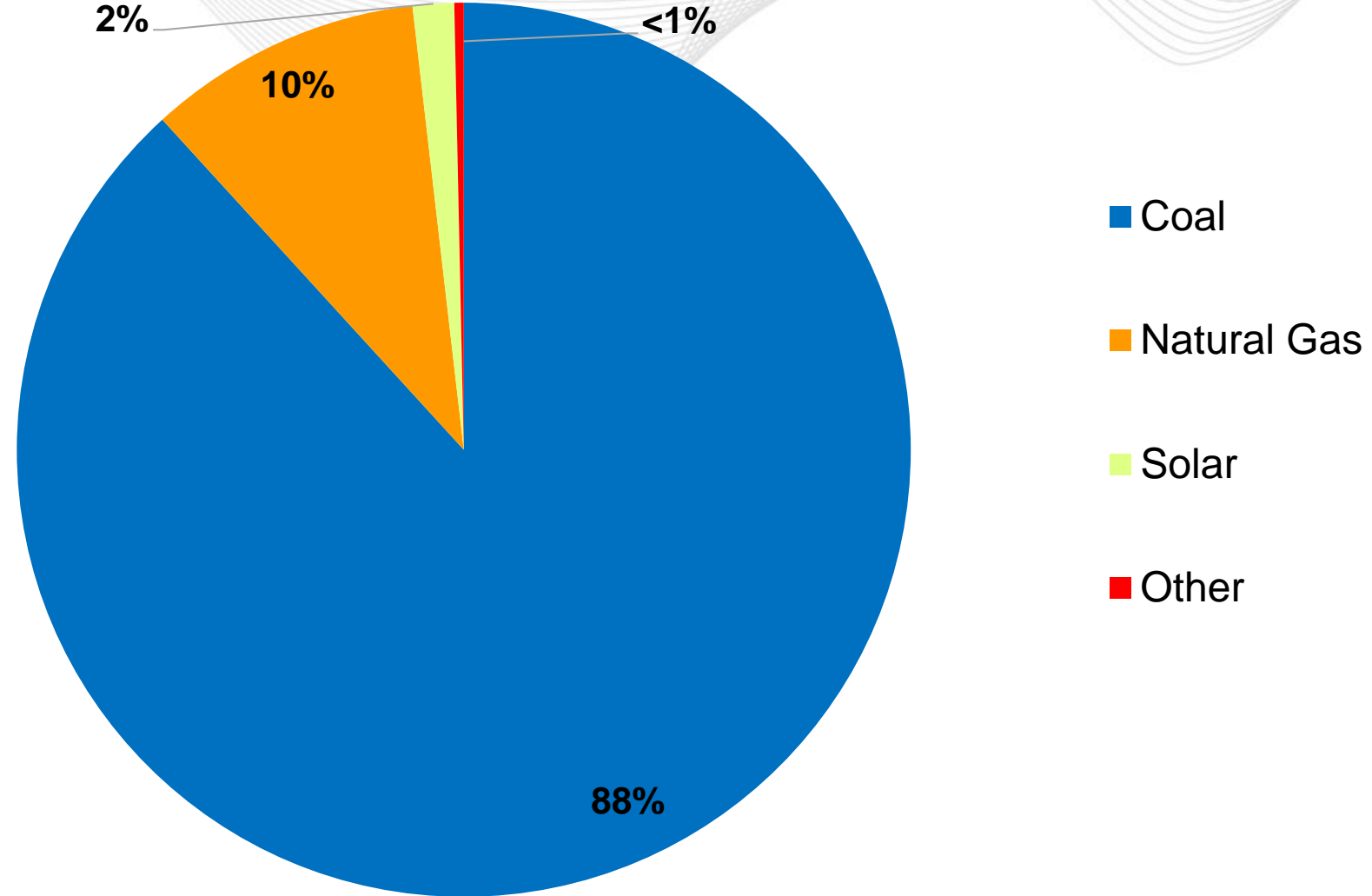
(Jan. 2024 – Dec. 2024)



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

Operations

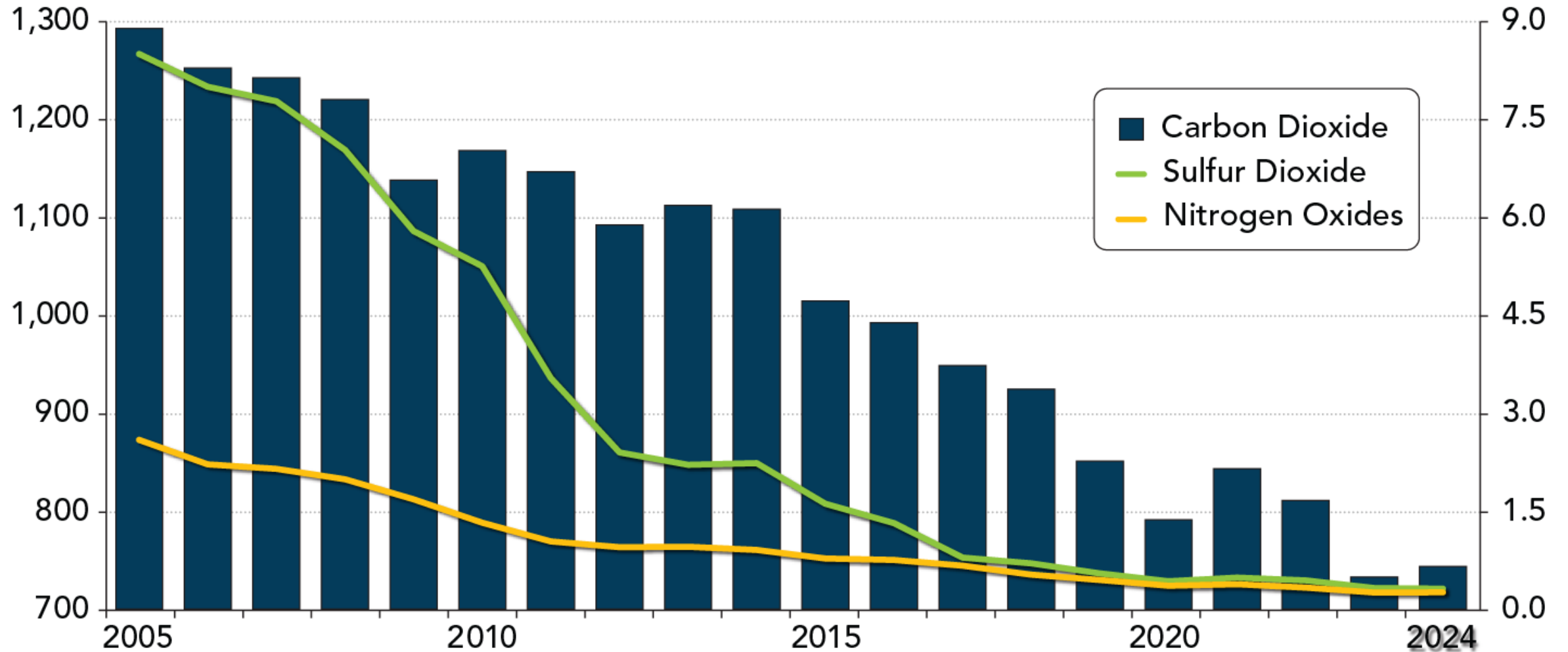
Kentucky – 2024 Generator Production



The data in this chart comes from EIA Form 923 (2024) and represents only generators within the PJM portion of Kentucky.

CO₂ lbs/MWh

SO₂ and NO_x lbs/MWh



Kentucky – Average Emissions (lbs/MWh)

(Feb. 2025)

CO₂
(lbs/MWh)

SO₂ and NO_x
(lbs/MWh)

