2022 New Jersey State Infrastructure Report

(January 1, 2022 – December 31, 2022)

May 2023

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- **Existing Capacity:** Natural gas represents approximately 68 percent of the total installed capacity in the New Jersey service territory while nuclear represents approximately 24.9 percent. Comparatively across PJM, natural gas and nuclear are 46.6 and 17.7 percent of total capacity, respectively.
- **Interconnection Requests:** Offshore wind represents 72.1 percent of proposed generation requests in New Jersey, while storage represents approximately 21.5 percent of new requests.
- **Deactivations:** 797.2 MW of generation deactivated in New Jersey in 2022. There are now no more active coal units in New Jersey.
- **RTEP 2022:** 2022 RTEP projects located in New Jersey total approximately $1.3 billion in investment. The portion of State Agreement Approach (SAA) projects that are located in New Jersey total approximately $947.40 million. There are also SAA-affiliated projects located in Maryland and Pennsylvania that total $116.96 million, which are cost allocated to New Jersey ratepayers.*

* The projects located in Maryland and Pennsylvania are not included in the $1.3 billion figure.

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- **Load Forecast:** New Jersey's summer peak load is projected remain flat or be negative over the next ten years, ranging from -0.5 and 0.0 percent growth depending on the individual transmission zone. Comparatively, the overall PJM RTO projected summer peak load growth rate is 0.8 percent.
- **2023/24 Capacity Market:** New Jersey's service territory cleared at the MAAC price of $49.49/MW-day for the 2023/2024 Base Residual Auction.
- **2024/25 Capacity Market:** New Jersey's service territory cleared the Eastern MAAC price of $54.95/MW-day for the 2024/2025 Base Residual Auction.
- **1/1/22 – 12/31/22 Market Performance:** New Jersey's average hourly LMPs were below the PJM average hourly LMP.
- **Emissions:** New Jersey's average CO2 emissions increased in 2022 compared to 2021 levels. Nitrogen oxides and sulfur dioxide levels slightly decreased in 2022.

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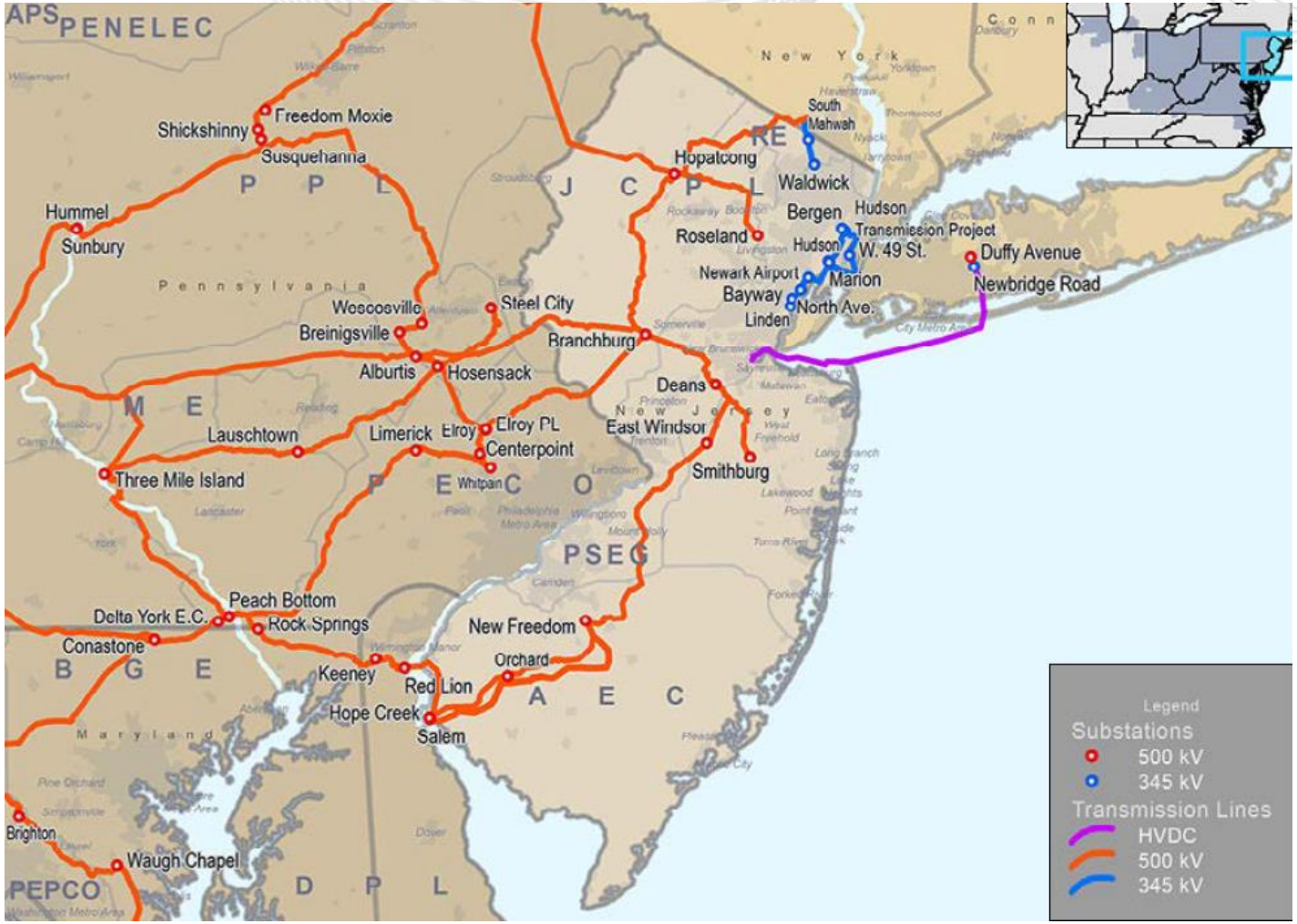
PJM Service Area – New Jersey



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Planning

Generation Portfolio Analysis

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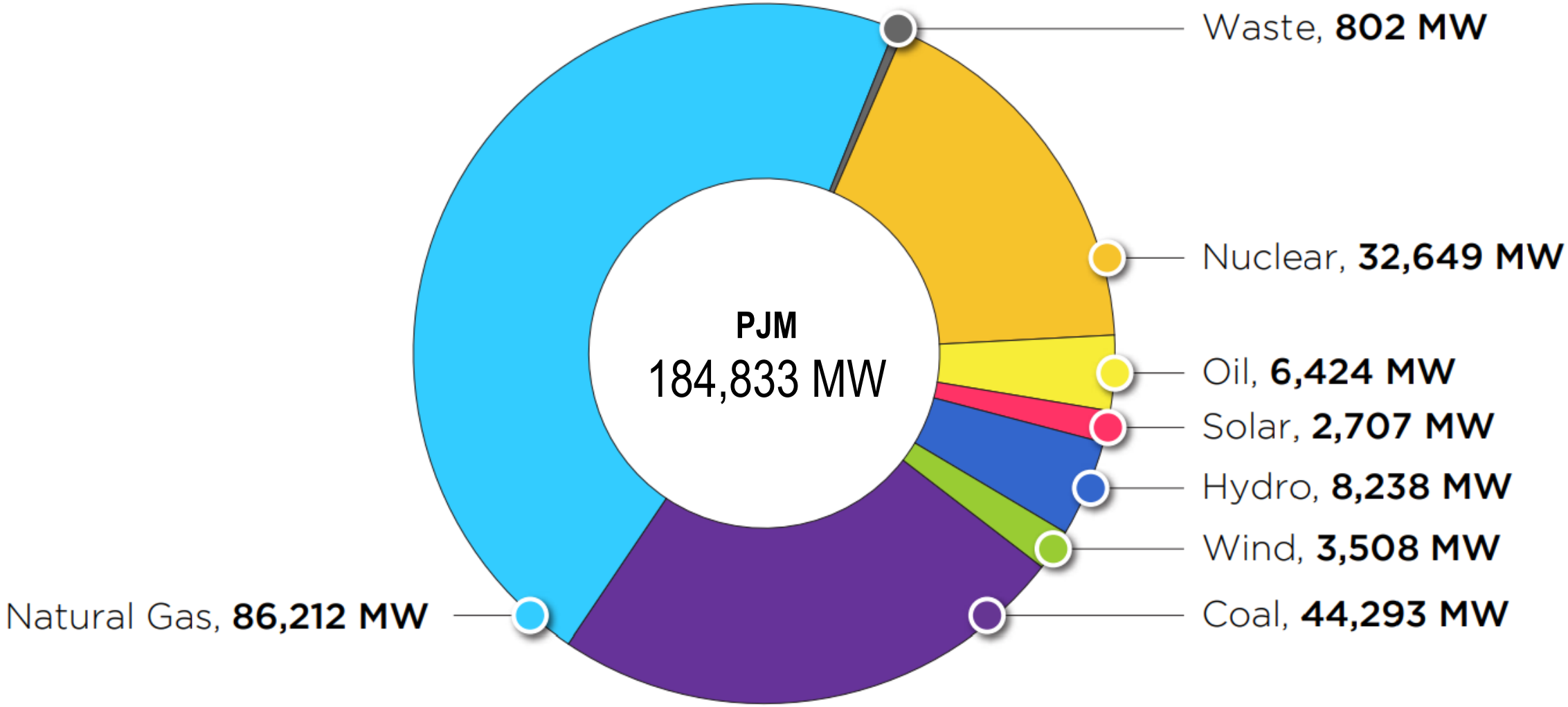
PJM – Existing Installed Capacity

(CIRs – as of Dec. 31, 2022)



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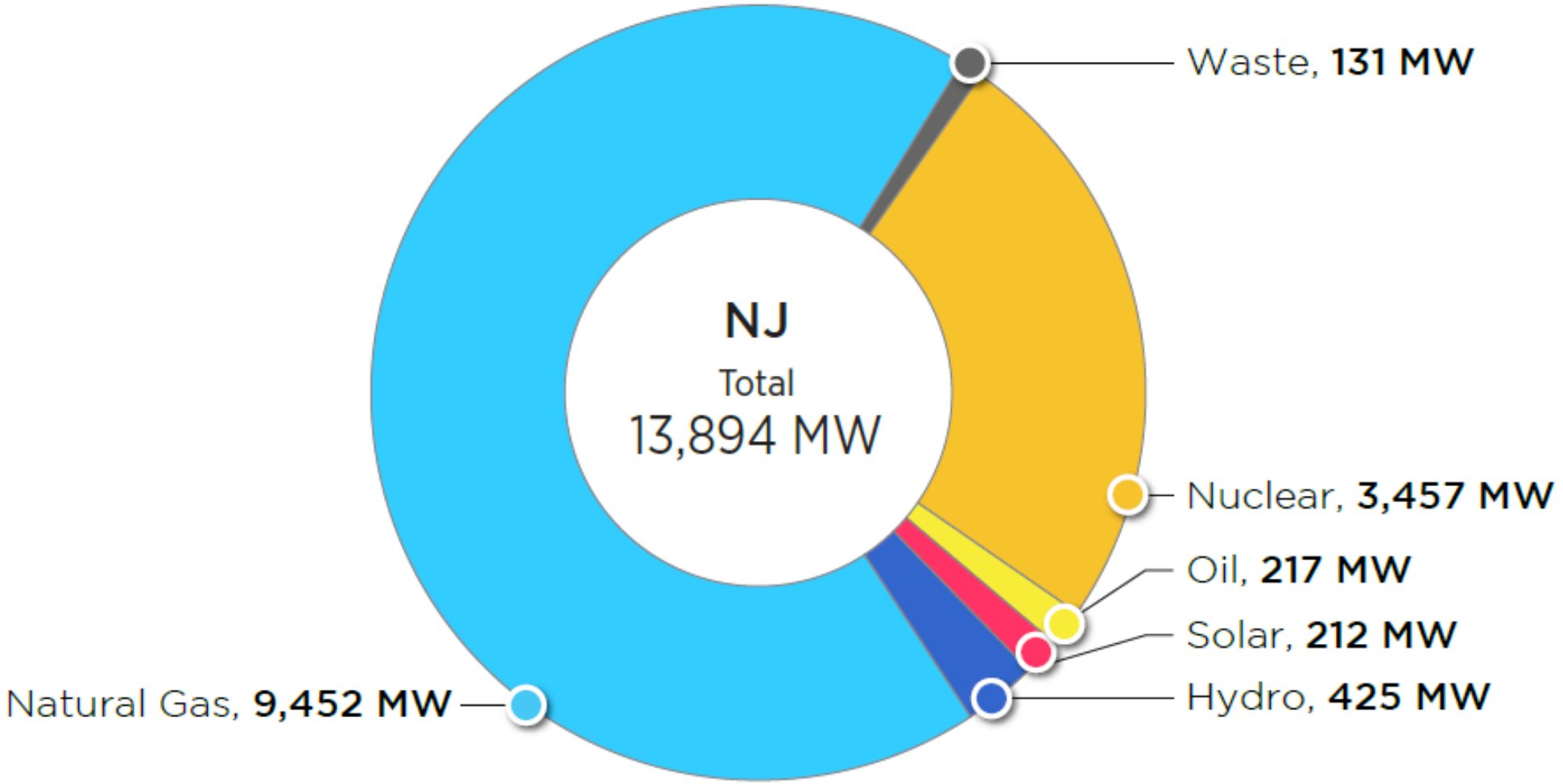
New Jersey – Existing Installed Capacity

(CIRs – as of Dec. 31, 2022)



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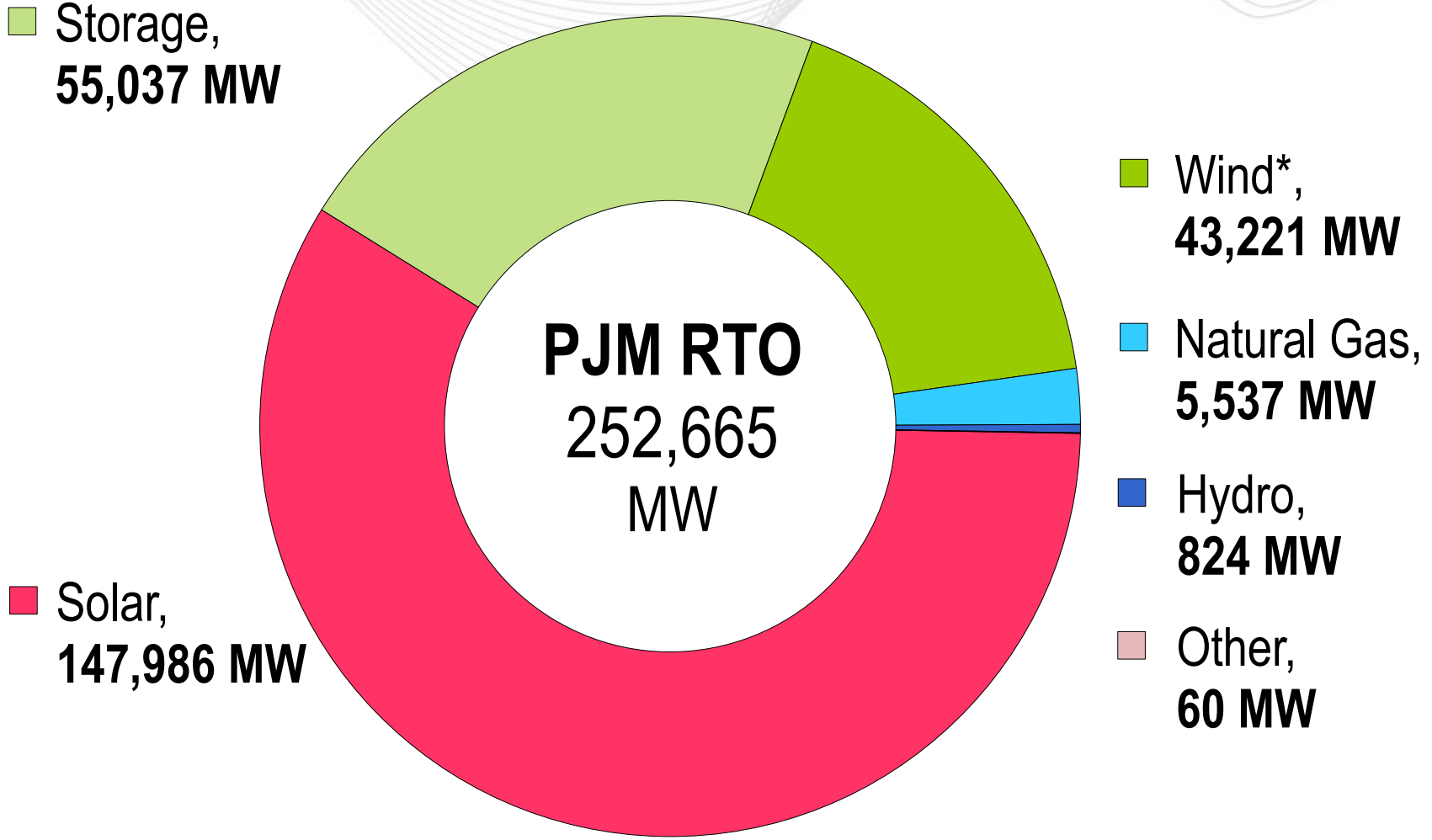
PJM Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of April 1, 2023)



*Wind includes both onshore and offshore wind

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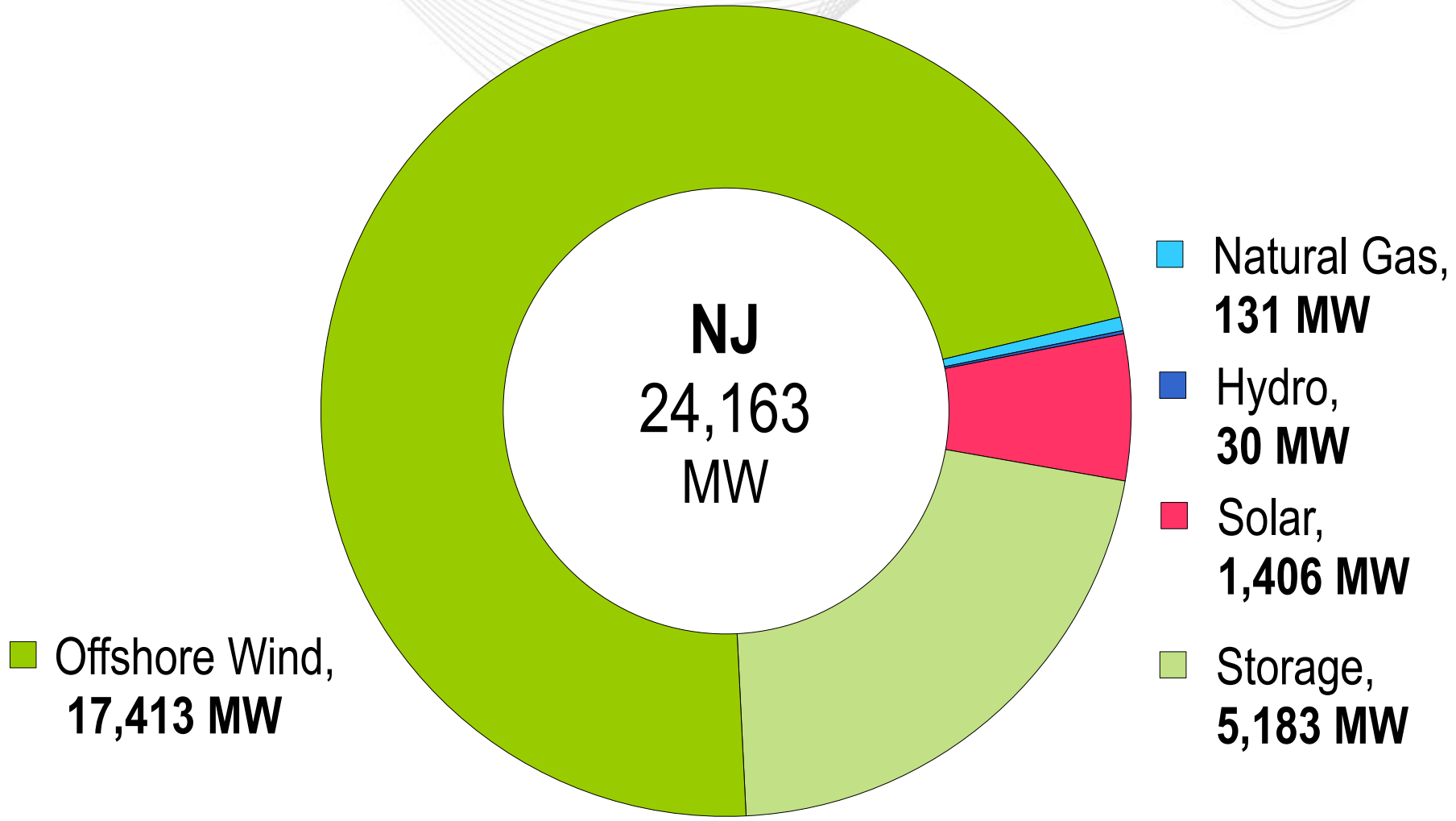
New Jersey Queued Capacity (Nameplate) by Fuel Type

("Active" in the PJM Queue as of April 1, 2023)



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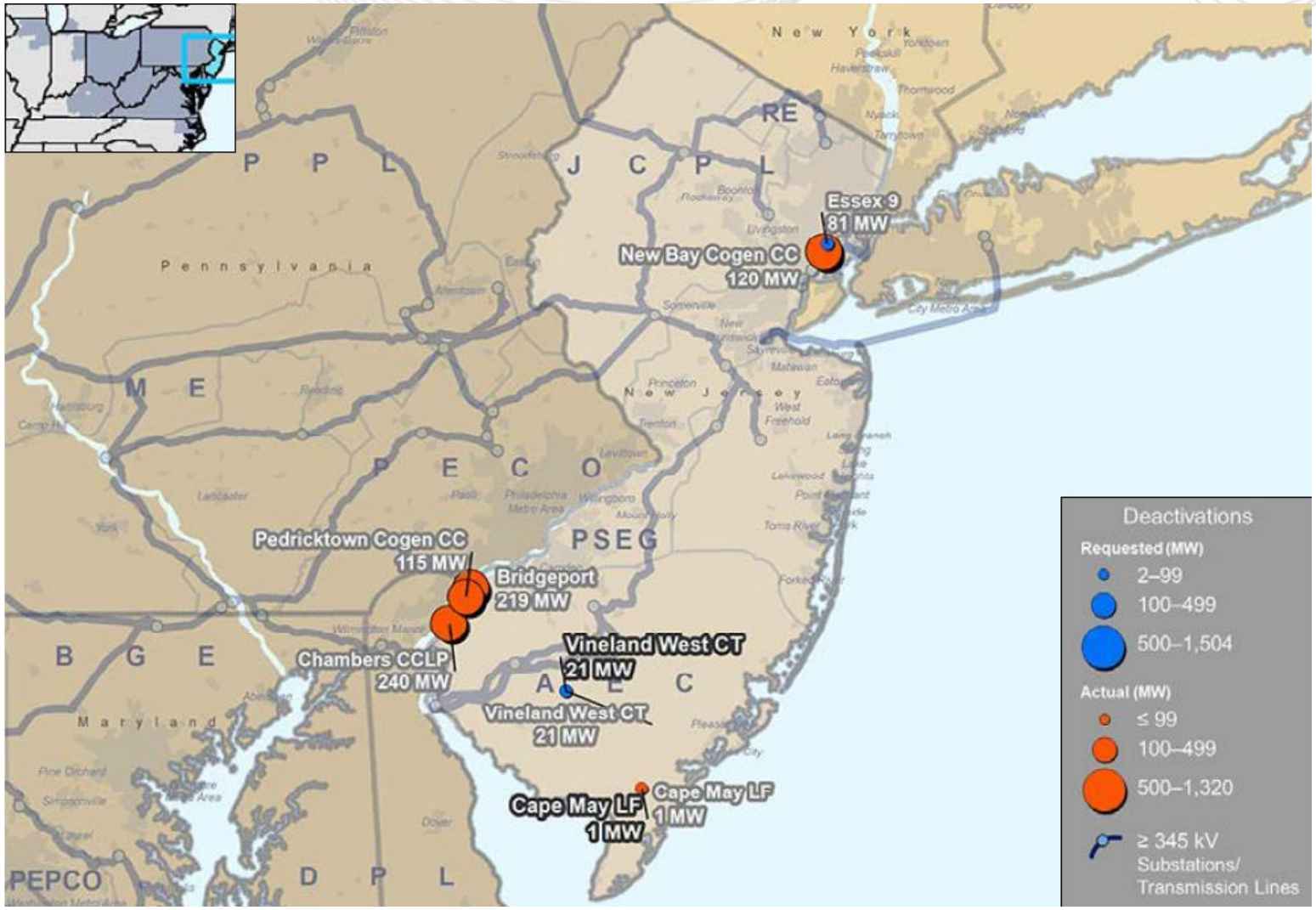
New Jersey – 2022 Generator Deactivations



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New Jersey – 2022 Generator Deactivations

Unit	TO Zone	Fuel Type	Request Received to Deactivate	Actual or Projected Deactivation Date	Age (Years)	Capacity (MW)
Vineland West CT	AE	Oil	7/6/2022	10/14/2022	50	21.1
Cape May County Municipal LF		Methane	5/5/2022	3/1/2022	9	0.6
Essex 9	PSEG	Natural Gas	3/3/2022	6/1/2022	32	81.0
Logan	AE	Coal	3/9/2022	5/31/2022	27	219.0
Chambers CCLP				6/7/2022	27	240.0
New Bay Cogen CC	PSEG	Natural Gas	7/15/2021	6/1/2022	28	120.2
Pedricktown Cogen CC	AE				29	115.3

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Transmission Infrastructure Analysis

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For reporting purposes, the 2022 state infrastructure reports provide maps displaying all baseline, network, and supplemental projects for the respective state. The reports also include aggregated project cost tables of these projects by Transmission Owner zone. For a detailed list of each project shown on a state's project map, please see that state's section in the **2022 Annual RTEP Report** on pjm.com: https://www.pjm.com/-/media/library/reports-notices/2022-rtep/2022-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/project-construction

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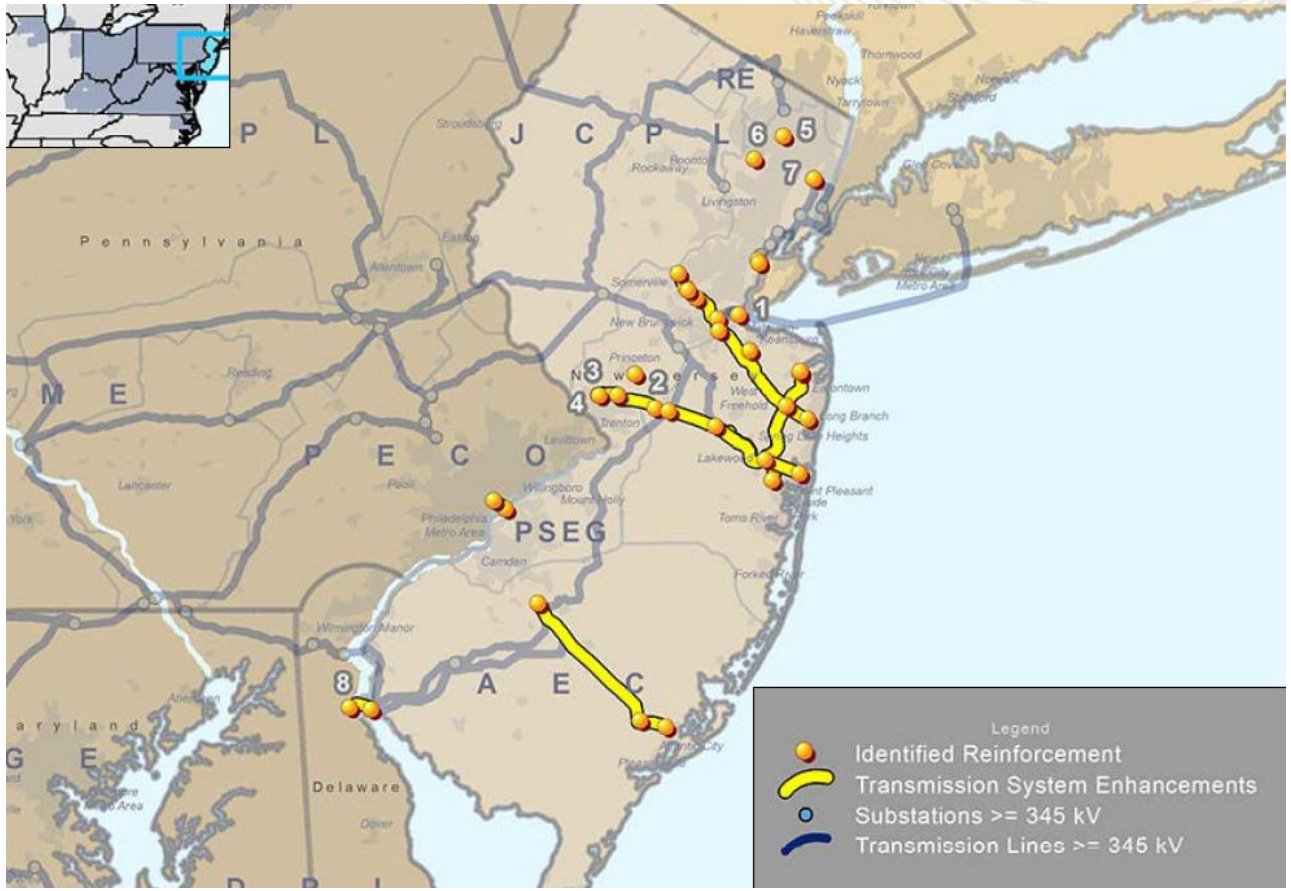
New Jersey – RTEP Baseline Projects



NJ Baseline Projects	
TO Zone	**Cost ($M)**
JCP&L	$7.70
PSEG	$41.30
New Jersey SAA (AEC, JCP&L, MAOD, LS POWER, PSEG)	$947.40*

*This total represents the portion of RTEP project b3737 that are located in New Jersey. There are also SAA-affiliated projects located in Maryland and Pennsylvania that total an additional $116.96 million. These projects are cost allocated to New Jersey ratepayers, and in this report are not included in the $947.40 million figure for NJ-located projects.

Note: Baseline upgrades are those that resolve a system reliability criteria violation.

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New Jersey – RTEP Network Projects

New Jersey had no network project upgrades in 2022.

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.

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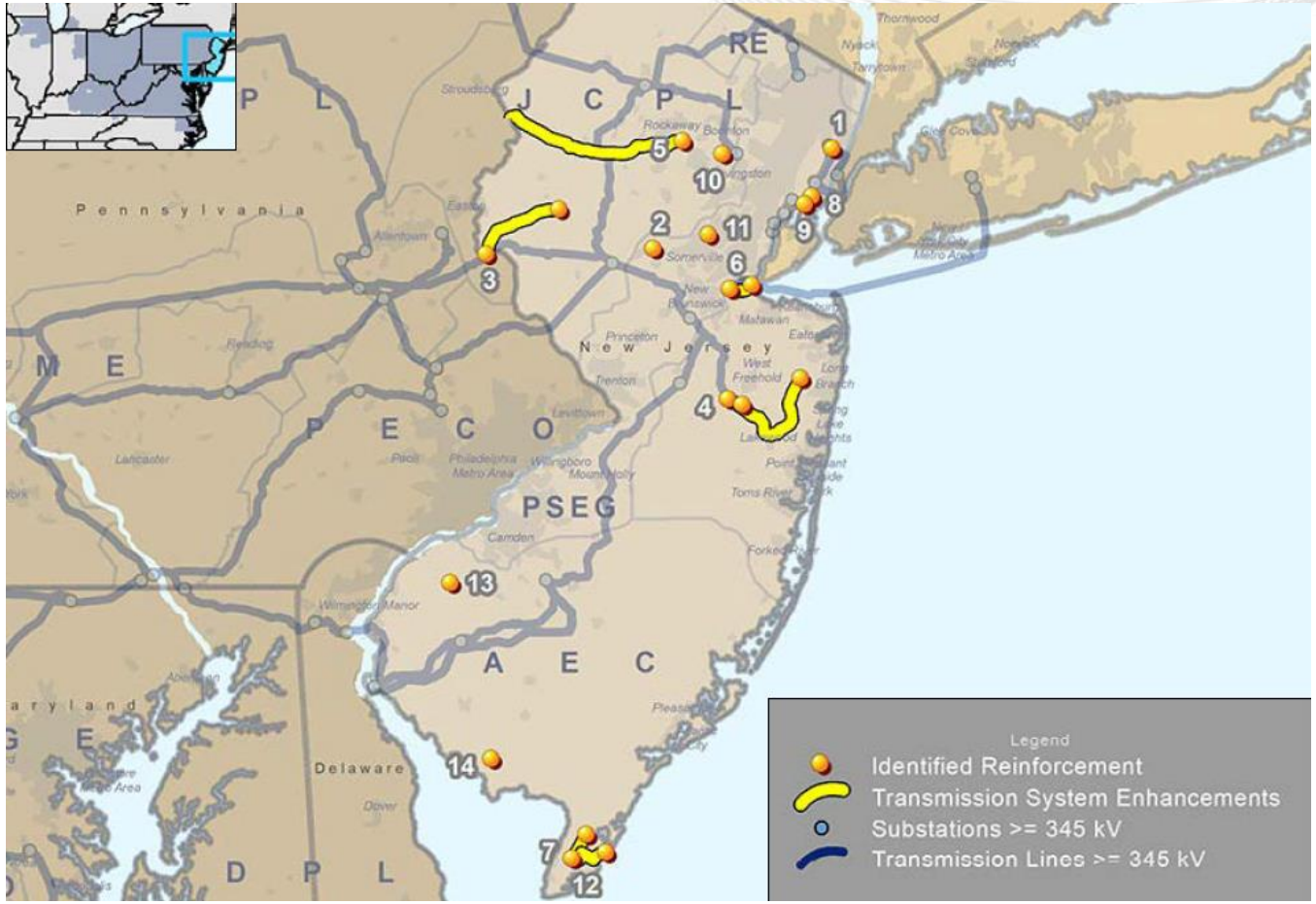
New Jersey – TO Supplemental Projects



NJ Supplemental Projects	
TO Zone	**Cost ($M)**
AEC	$43.70
JCP&L	$8.80
PSEG	$252.80

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.

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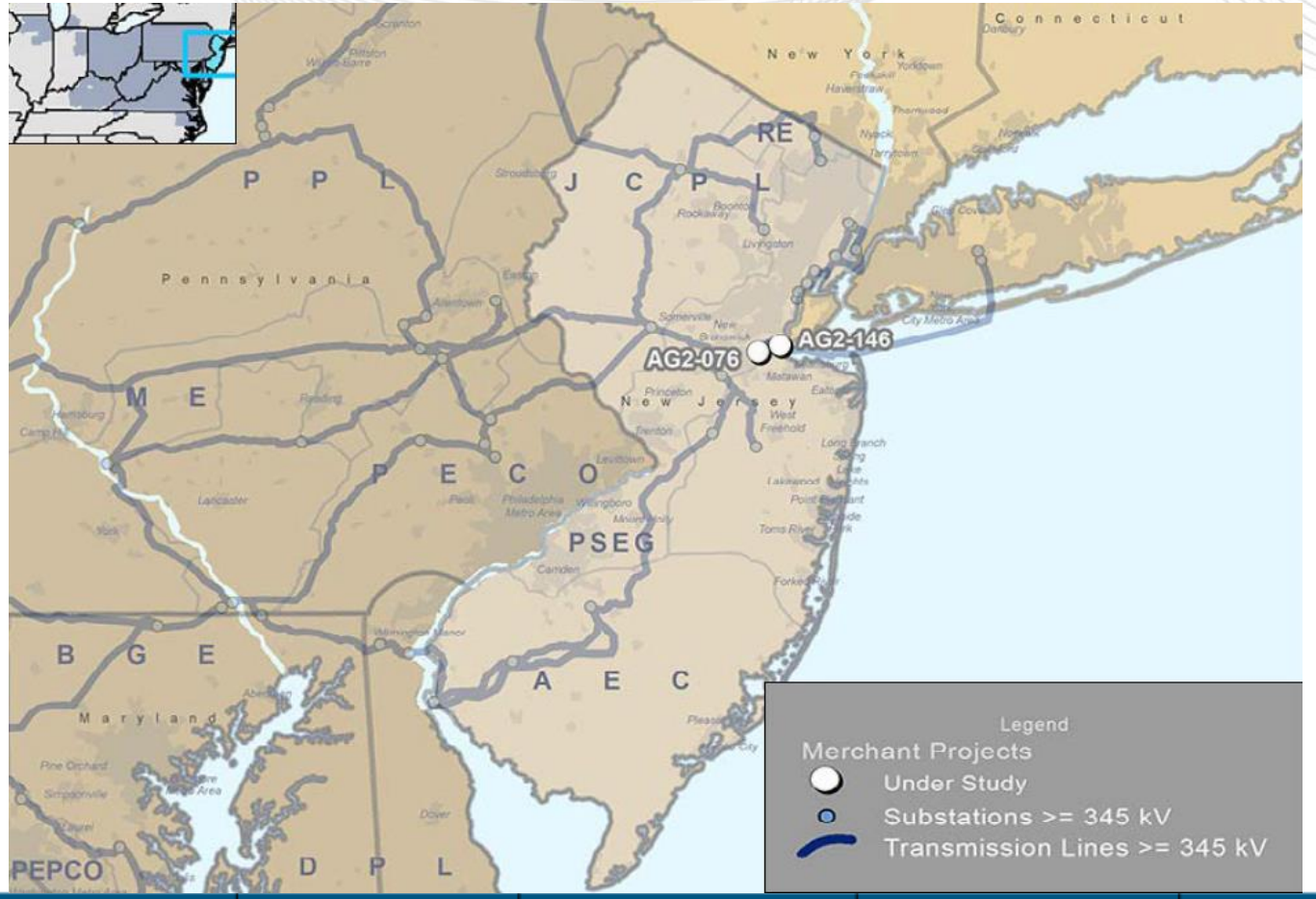
New Jersey – Merchant Transmission Project Requests



Queue Number	Queue Name	TO Zone	Status	Actual or Requested In-Service Date	Maximum Output (MW)
AG2-076	Raritan River 230 kV	JCP&L	Active	1/1/2024	0
AG2-146	Werner 230 kV-Ravenwood 345 kV			12/1/2026	0

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Load Forecast

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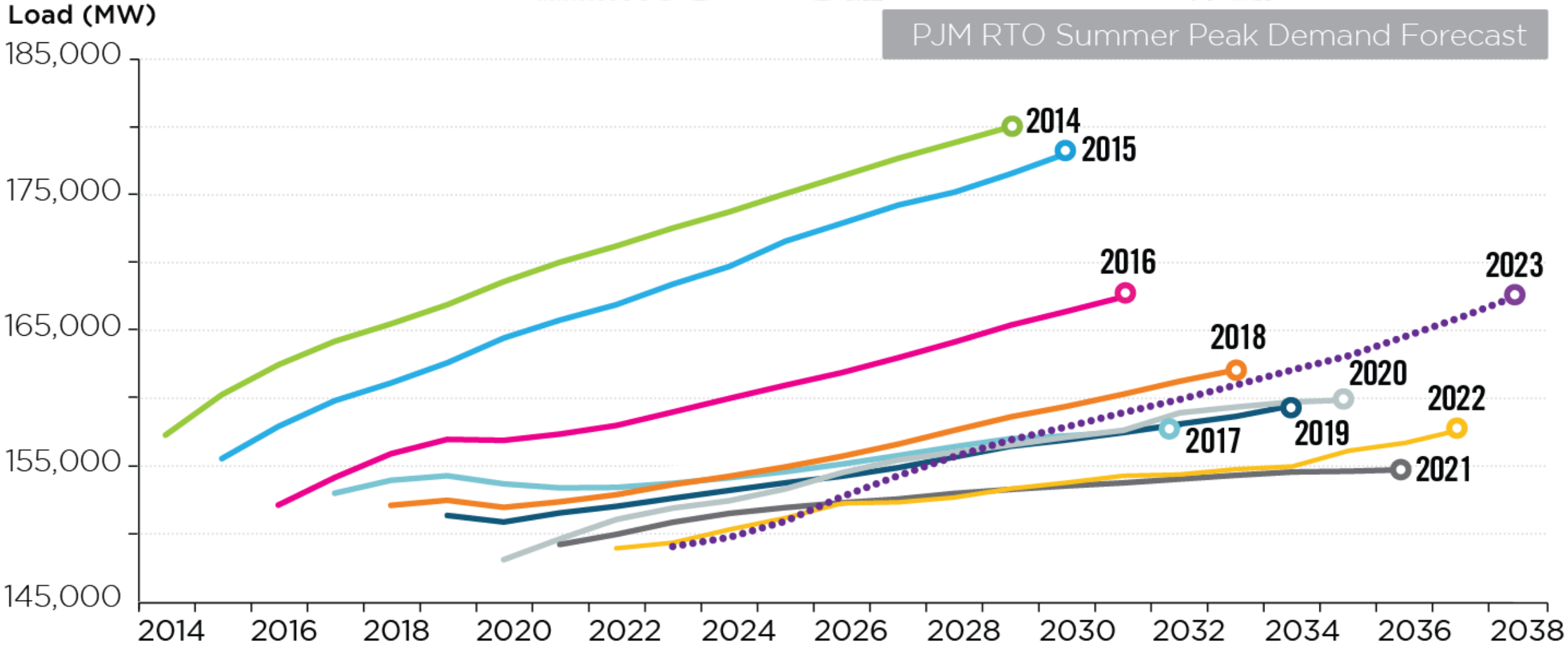
PJM Annual Load Forecast

(Jan. 2023)



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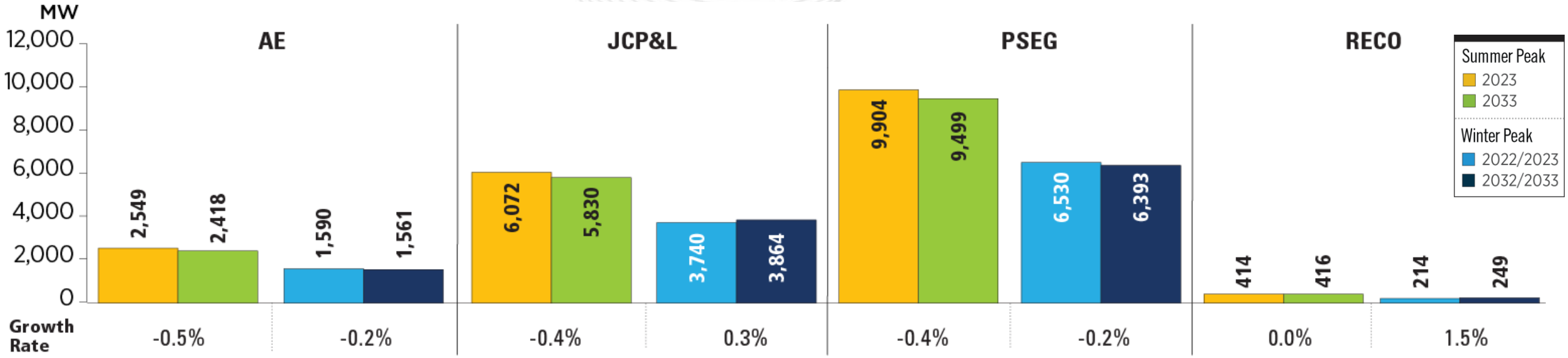
New Jersey – 2023 Load Forecast Report



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

2023	2033
149,059 MW	160,971 MW

Growth Rate 0.8%

PJM RTO Winter Peak

2022/2023	2032/2033
130,811 MW	144,992 MW

Growth Rate 1.0%

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Markets

Capacity Market Results

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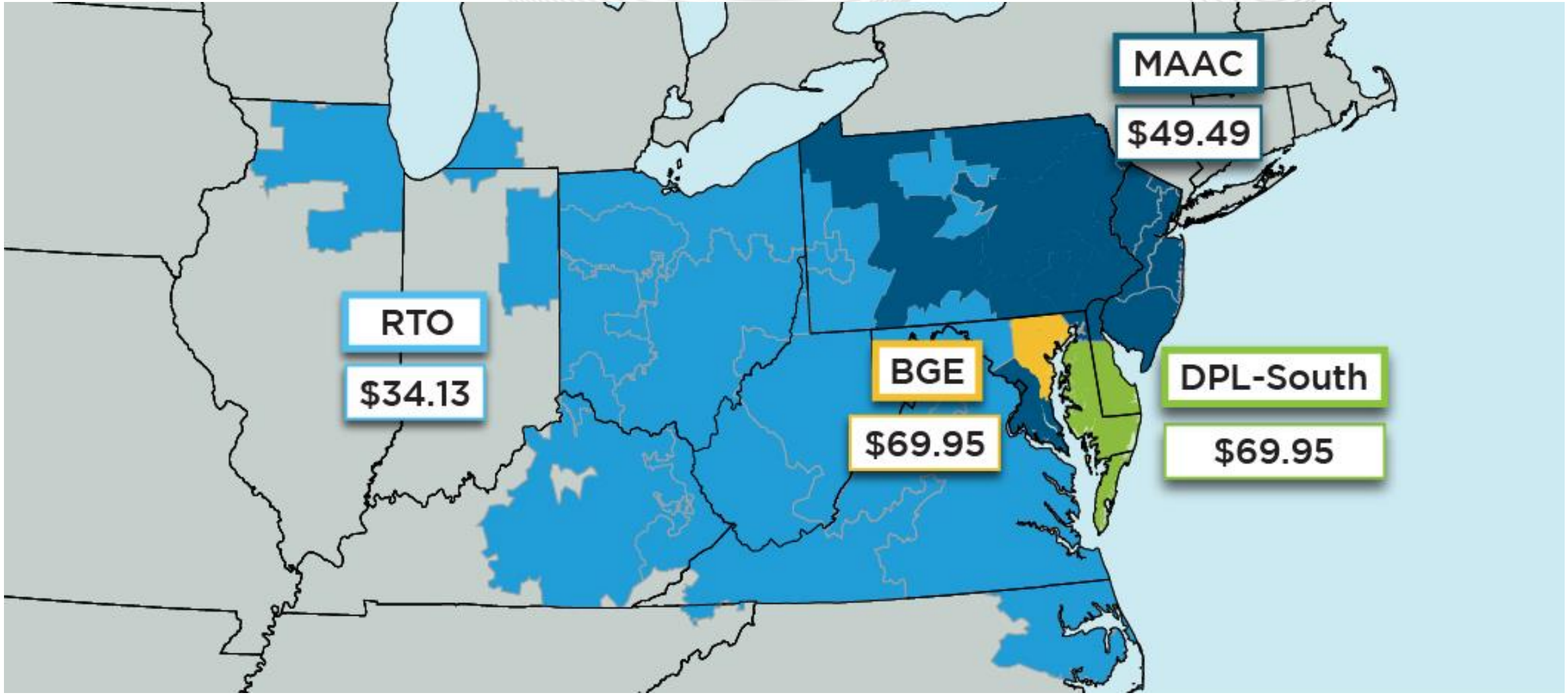
2023/24 Base Residual Auction Clearing Prices ($/MW-Day)



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2023/24 Cleared MW (UCAP) by Resource Type

	ANNUAL	SUMMER	WINTER	Total (MW)
Generation	131,256.3	47.0	474.1	131,777.4
DR	7,919.1	177.1	0.0	8,096.2
EE	5,221.1	250.0	0.0	5,471.1
Total (MW)	144,396.5	474.1	474.1	

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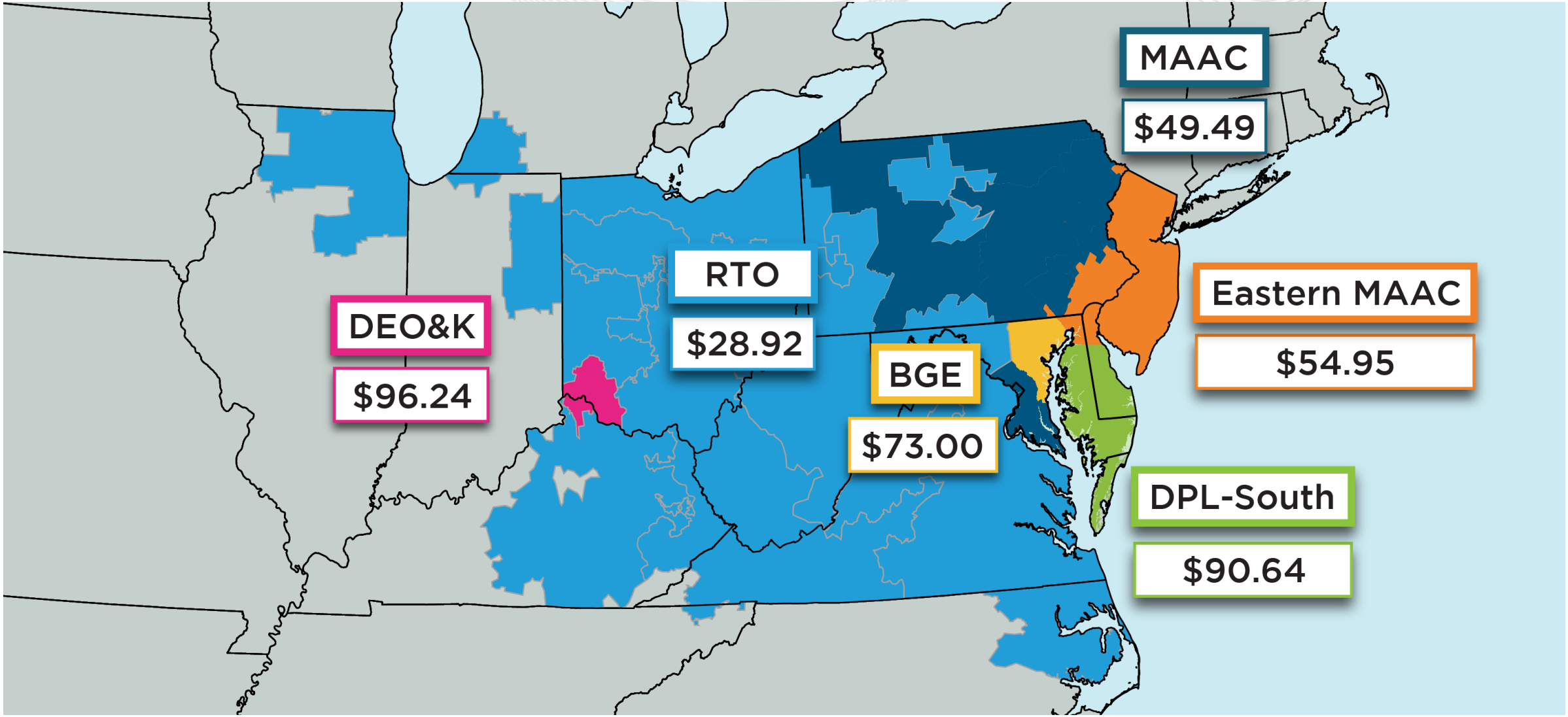
2024/25 Base Residual Auction Clearing Prices ($/MW-Day)



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2024/2025 Cleared MW (UCAP) by Resource Type

	ANNUAL	SUMMER	WINTER	Total (MW)
Generation	131,779.3	38.2	605.6	132,423.1
DR	7,804.3	188.4	0	7,992.7
EE	7,289.7	379.0	0	7,668.7
Total (MW)	**146,873.3**	**605.6**	**605.6**	

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Markets

Market Analysis

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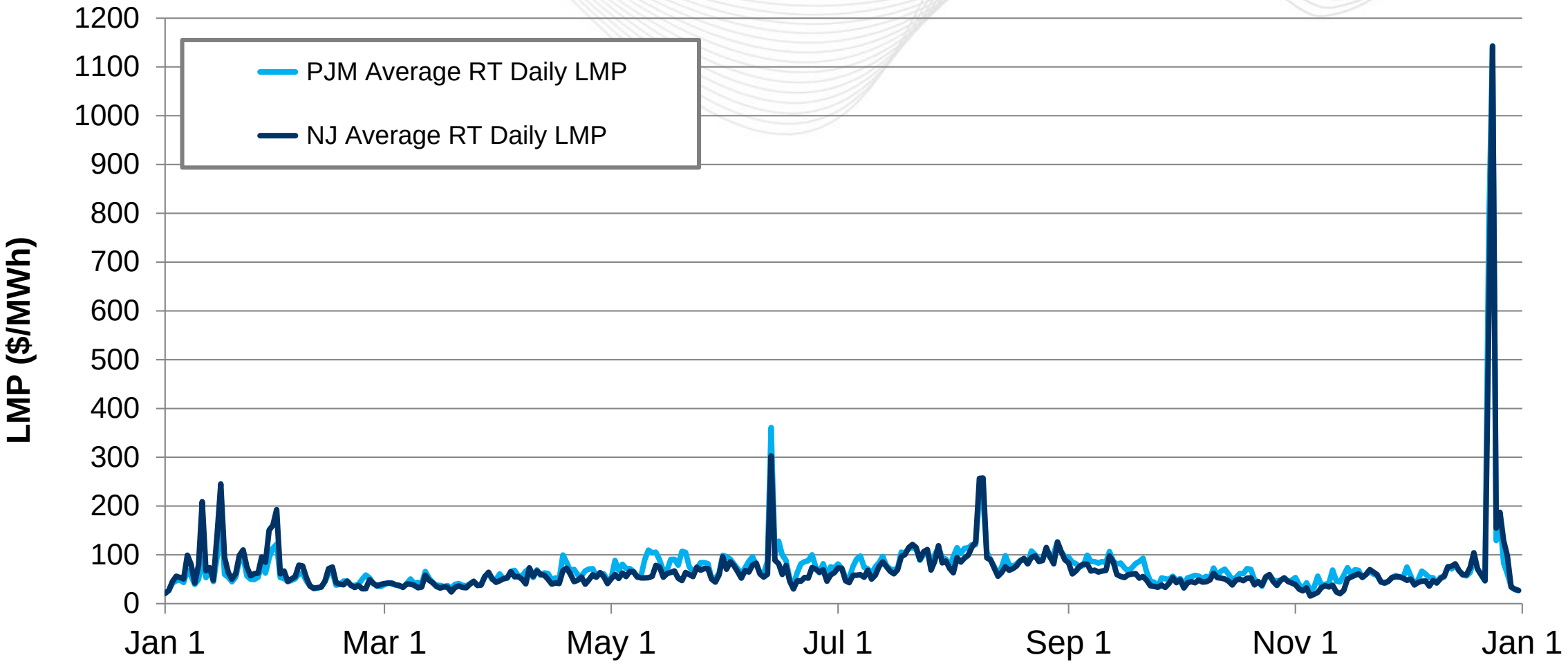
New Jersey – Average Daily LMP

(Jan. 1, 2022 – Dec. 31, 2022)



Note: The significant price spike in late Dec. 2022 was a result of Winter Storm Elliott's impact on system conditions.

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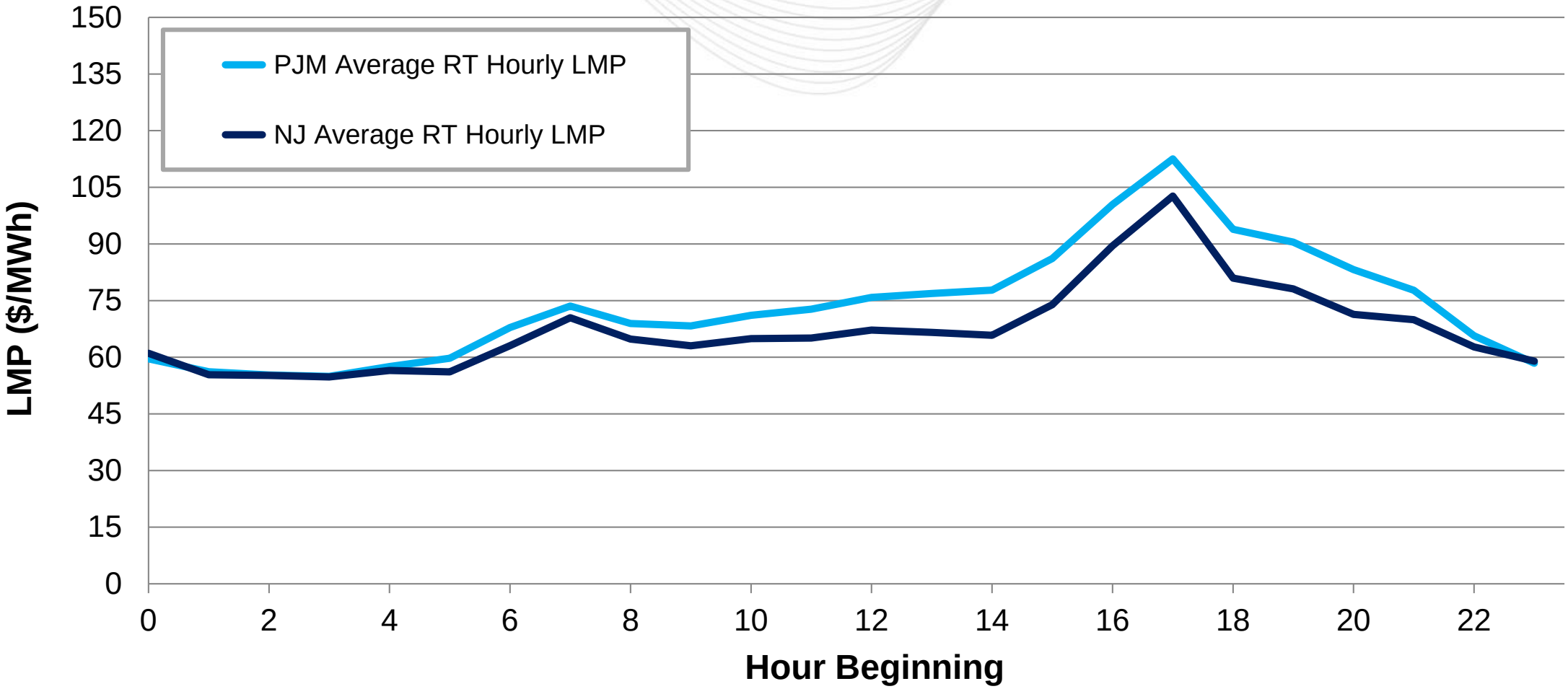
New Jersey – Average Hourly LMP

(Jan. 1, 2022 – Dec. 31, 2022)

New Jersey's average hourly LMPs were below the PJM average hourly LMP.



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New Jersey – Net Energy Import/Export Trend

(Jan. 2022 – Dec. 2022)

Positive values represent exports and negative values represent imports.

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Operations

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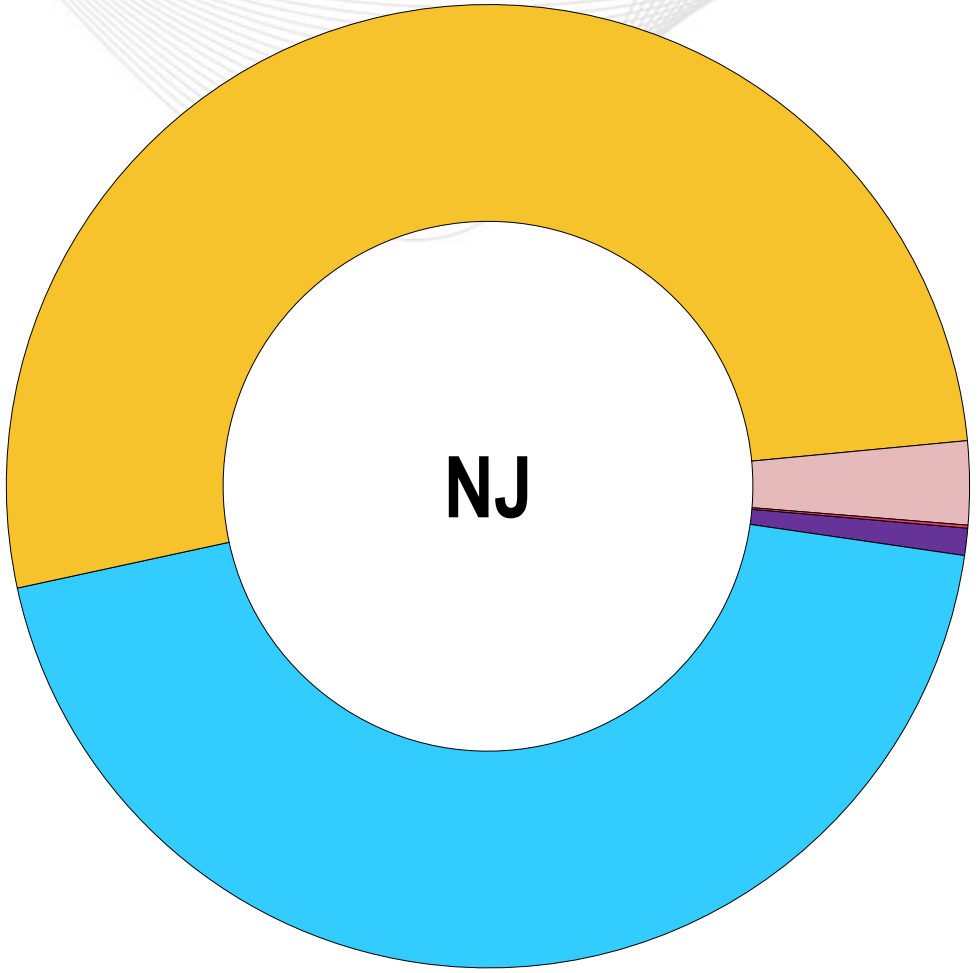
New Jersey – 2022 Generator Production



- Nuclear, **51.9%**
- Other, **2.8%**
- Solar, **0.1%**
- Coal, **0.9%**
- Natural Gas, **44.3%**

The data in this chart comes from EIA Form 923 (2022).

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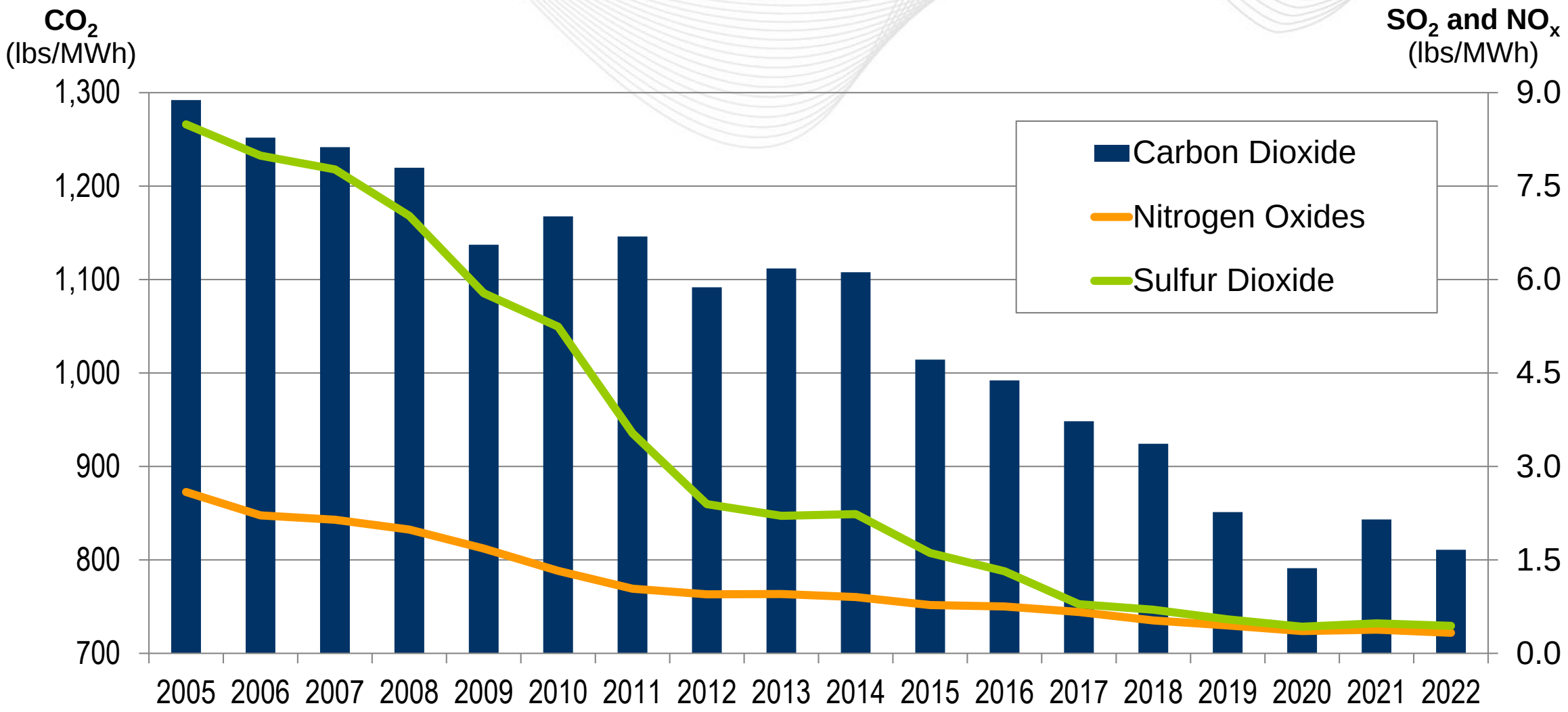
2005 – 2022 PJM Average Emissions

(March 2023)



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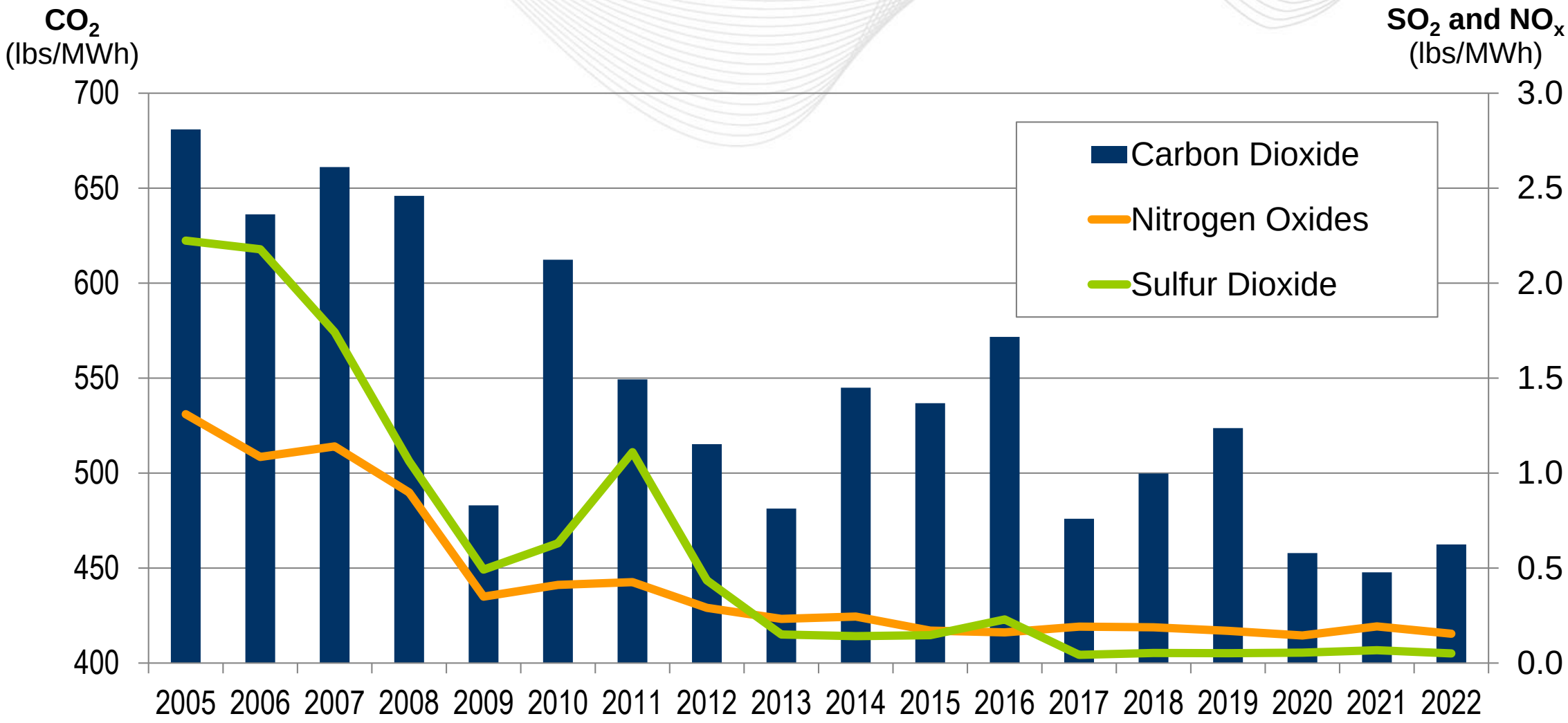
New Jersey – Average Emissions (lbs/MWh)

(March 2023)



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