2022 Tennessee Infrastructure Report
(January 1, 2022 – December 31, 2022)

May 2023

This report reflects information for the portion of Tennessee within the PJM service territory.
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Interconnection Requests: Tennessee has 156 MW of solar generation seeking interconnection in the PJM queue.

Deactivations: Tennessee had no generators deactivate or give a notice of deactivation in 2022.

RTEP 2022: Tennessee had no RTEP projects in 2022.

Load Forecast: Tennessee’s summer peak load is projected to increase by 0.1 percent annually over the next ten years, while the winter peak is projected to increase by 0.2 percent.

1/1/22 – 12/31/22 Market Performance: Tennessee’s average hourly LMPs aligned with the PJM average hourly LMP.
The PJM service area in Tennessee 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

(CIRs – as of Dec. 31, 2022)

PJM
184,833 MW

- Waste, 802 MW
- Nuclear, 32,649 MW
- Oil, 6,424 MW
- Solar, 2,707 MW
- Hydro, 8,238 MW
- Wind, 3,508 MW
- Coal, 44,293 MW

Natural Gas, 86,212 MW
PJM Queued Capacity (Nameplate) by Fuel Type
(“Active” in the PJM Queue as of April 1, 2023)

- **Solar**, 147,986 MW
- **Storage**, 55,037 MW
- **Wind***, 43,221 MW
- **Natural Gas**, 5,537 MW
- **Hydro**, 824 MW
- **Other**, 60 MW

*Wind includes both onshore and offshore wind
Tennessee Queued Capacity (Nameplate) by Fuel Type

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

TN
156
MW

Solar,
156 MW
Tennessee had no generators deactivate or give a notice of deactivation in 2022.
Planning
Transmission Infrastructure Analysis
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:

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
Tennessee – RTEP Baseline Projects

Tennessee had no baseline projects in 2022.

Note: Baseline upgrades are those that resolve a system reliability criteria violation.
Tennessee – RTEP Network Projects

Tennessee had no network projects 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.
Tennessee had no supplemental projects in 2022.

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 Annual Load Forecast
(Jan. 2023)

PJM RTO Summer Peak Demand Forecast

Load (MW)

185,000

175,000

165,000

155,000

145,000


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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.

**Tennessee – 2023 Load Forecast Report**

**AEP**

<table>
<thead>
<tr>
<th>Growth Rate</th>
<th>0.1%</th>
<th>0.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth Rate</td>
<td>306</td>
<td>309</td>
</tr>
<tr>
<td>384</td>
<td>390</td>
<td></td>
</tr>
</tbody>
</table>

**PJM RTO Summer Peak**
- 2023: 149,059 MW
- 2023: 160,971 MW
  - Growth Rate: 0.8%

**PJM RTO Winter Peak**
- 2022/2023: 130,811 MW
- 2032/2033: 144,992 MW
  - Growth Rate: 1.0%

AEP serves load outside TN
Markets
Capacity Market Results
2023/24 Base Residual Auction Clearing Prices ($/MW-Day)
### 2023/24 Cleared MW (UCAP) by Resource Type

<table>
<thead>
<tr>
<th></th>
<th>ANNUAL</th>
<th>SUMMER</th>
<th>WINTER</th>
<th>Total (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generation</strong></td>
<td>131,256.3</td>
<td>47.0</td>
<td>474.1</td>
<td>131,777.4</td>
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<tr>
<td><strong>DR</strong></td>
<td>7,919.1</td>
<td>177.1</td>
<td>0.0</td>
<td>8,096.2</td>
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<tr>
<td><strong>EE</strong></td>
<td>5,221.1</td>
<td>250.0</td>
<td>0.0</td>
<td>5,471.1</td>
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<tr>
<td><strong>Total (MW)</strong></td>
<td>144,396.5</td>
<td>474.1</td>
<td>474.1</td>
<td>144,396.5</td>
</tr>
</tbody>
</table>
2024/25 Base Residual Auction Clearing Prices ($/MW-Day)

- **MAAC**: $49.49
- **Eastern MAAC**: $54.95
- **DPL-South**: $90.64
- **DEO&K**: $96.24
- **RTO**: $28.92
- **BGE**: $73.00
## 2024/2025 Cleared MW (UCAP) by Resource Type

<table>
<thead>
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<th>SUMMER</th>
<th>WINTER</th>
<th>Total (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generation</strong></td>
<td>131,779.3</td>
<td>38.2</td>
<td>605.6</td>
<td>132,423.1</td>
</tr>
<tr>
<td><strong>DR</strong></td>
<td>7,804.3</td>
<td>188.4</td>
<td>0</td>
<td>7,992.7</td>
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<tr>
<td><strong>EE</strong></td>
<td>7,289.7</td>
<td>379.0</td>
<td>0</td>
<td>7,668.7</td>
</tr>
<tr>
<td><strong>Total (MW)</strong></td>
<td>146,873.3</td>
<td>605.6</td>
<td>605.6</td>
<td></td>
</tr>
</tbody>
</table>
Note: The significant price spike in late Dec. 2022 was a result of Winter Storm Elliott's impact on system conditions.
Tennessee’s average hourly LMPs aligned with the PJM average hourly LMP.
This chart reflects the portion of Tennessee that PJM operates. Positive values represent exports and negative values represent imports.
Operations
Emissions Data
2005 – 2022 PJM Average Emissions
(March 2023)

- **Carbon Dioxide**
- **Nitrogen Oxides**
- **Sulfur Dioxide**