2019 Tennessee State Infrastructure Report  
(January 1, 2019 – December 31, 2019)  

May 2020  

This report reflects information for the portion of Tennessee within the PJM service territory.
1. Planning
   • Generation Portfolio Analysis
   • Transmission Analysis
   • Load Forecast

2. Markets
   • Market Analysis

3. Operations
   • Emissions Data
Executive Summary
(May 2020)

• **Existing Capacity:** There are 45 MW of installed capacity in the part of Tennessee served by PJM.

• **Interconnection Requests:** There are no interconnection requests in Tennessee.

• **Deactivations:** No generation in Tennessee gave notification of deactivation in 2019.

• **RTEP 2019:** Tennessee had no RTEP projects in 2019.

• **Load Forecast:** Tennessee’s load within the PJM footprint is projected to grow at 0.4 percent annually over the next ten years. The overall PJM RTO projected load growth rate is 0.3 percent.

• **1/1/19 – 12/31/19 Market Performance:** Tennessee’s average locational marginal prices generally aligned with PJM average hourly LMPs.
Planning
Generation Portfolio Analysis
PJM – Existing Installed Capacity
(CIRs – as of Dec. 31, 2019)

- Hydro, 8,332 MW
- Solar, 791 MW
- Oil, 9,424 MW
- Nuclear, 32,653 MW
- Waste, 849 MW
- Natural Gas, 78,047 MW
- Wind, 1,239 MW
- Coal, 52,838 MW
Tennessee – Existing Installed Capacity
(CIRs – as of Dec. 31, 2019)

TN
45 MW

Waste, 45 MW
Tennessee – Progression History of Interconnection Requests

This graphic shows the final state of generation submitted in all PJM queues that reached in-service operation, began construction, or was suspended or withdrawn as of Dec. 31, 2019.

<table>
<thead>
<tr>
<th>Applications Received by PJM</th>
<th>Feasibility Studies Issued</th>
<th>Impact Studies Issued</th>
<th>Facilities Studies Issued</th>
<th>ISA/WMPA Executed</th>
<th>Facilities Constructed</th>
</tr>
</thead>
<tbody>
<tr>
<td>165 MW</td>
<td>165 MW</td>
<td>165 MW</td>
<td>165 MW</td>
<td>90 MW</td>
<td>90 MW</td>
</tr>
</tbody>
</table>

Percentage of planned capacity and projects that have reached commercial operation:
- 55% Requested capacity megawatt
- 67% Requested projects
# Tennessee – Interconnection Requests
(Unforced Capacity – as of Dec. 31, 2019)

<table>
<thead>
<tr>
<th></th>
<th>Complete</th>
<th></th>
<th></th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Service</td>
<td>Withdrawn</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. of Projects</td>
<td>Capacity (MW)</td>
<td>No. of Projects</td>
<td>Capacity (MW)</td>
</tr>
<tr>
<td>Non-Renewable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
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<td>1</td>
<td>75.0</td>
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<tr>
<td>Renewable</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
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<td>90.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2</td>
<td>90.0</td>
<td>1</td>
<td>75.0</td>
</tr>
</tbody>
</table>
Planning
Transmission Infrastructure Analysis
Tennessee had no baseline project upgrades in 2019.

Note: Baseline upgrades are those that resolve a system reliability criteria violation.
Tennessee had no network project upgrades in 2019.

Note: Network upgrades 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.
Tennessee – TO Supplemental Projects
(Greater than $5 million)

Tennessee had no supplemental project upgrades in 2019.

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
The summer and winter peak megawatt values reflect the estimated amount of forecasted load to be served by each transmission owner in the noted state. 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.

The Load Forecast was produced prior to COVID-19 and will be updated before the next Base Residual Auction to reflect changes in load patterns.
Markets
Market Analysis
Tennessee’s average daily LMPs generally aligned with the PJM average daily LMP.

Note: The price spike in October reflects the Performance Assessment Interval event that occurred on October 2nd.
Tennessee’s average hourly LMPs generally 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.
2005 – 2019 PJM Average Emissions

CO₂
(lbs/MWh)

SO₂ and NOₓ
(lbs/MWh)

Carbon Dioxide
Nitrogen Oxides
Sulfur Dioxides