2022 Illinois State Infrastructure Report
(January 1, 2022 – December 31, 2022)

May 2023

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

1. Planning
   • Generation Portfolio Analysis
   • Transmission Analysis
   • Load Forecast

2. Markets
   • Capacity Market Results
   • Market Analysis
   • Net Energy Import/Export Trend

3. Operations
   • Generator Production
   • Emissions Data
• **Existing Capacity:** Natural gas represents approximately 44.4 percent of the total installed capacity in the Illinois service territory while nuclear represents approximately 39.3 percent. Across all of PJM, natural gas and nuclear account for approximately 46.6 and 17.7 percent of total capacity, respectively.

• **Interconnection Requests:** Approximately 49.3 of the proposed generation in Illinois is solar, while wind comprises 26.1 percent and storage comprises 23.8 percent of proposed generation.

• **Deactivations:** 1,202.7 MW of generation deactivated and 1,381 MW gave a notice of deactivation in Illinois during 2022.

• **RTEP 2022:** Illinois' 2022 RTEP project total represents approximately $165.44 million in investment.
• **Load Forecast**: Illinois’ summer peak load is projected to decrease by 0.4 percent annually over the next ten years, while the winter peak is projected to increase by 0.2 percent.

• **2023/24 Capacity Auction**: The portion of Illinois within the PJM footprint cleared at the RTO price of $34.13/MW-day in the 2023/2024 Base Residual Auction.

• **2024/25 Capacity Auction**: The portion of Illinois within the PJM footprint cleared at the RTO price of $28.92/MW-day for the 2024/2025 Base Residual Auction.

• **1/1/22 – 12/31/22 Market Performance**: Illinois’s average hourly LMPs were below the PJM average hourly LMP.

• **Emissions**: Illinois’ average CO2 emissions slightly decreased in 2022 compared to 2021 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
(CIRs – as of Dec. 31, 2022)

- Natural Gas, 86,212 MW
- Coal, 44,293 MW
- Wind, 3,508 MW
- Hydro, 8,238 MW
- Solar, 2,707 MW
- Oil, 6,424 MW
- Nuclear, 32,649 MW
- Waste, 802 MW

PJM: 184,833 MW
Illinois – Existing Installed Capacity
(CIRs – as of Dec. 31, 2022)

Total 26,746 MW

- Nuclear, 10,517 MW
- Natural Gas, 11,867 MW
- Coal, 2,650 MW
- Wind, 1,437 MW
- Solar, 3 MW
- Oil, 272 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
Illinois Queued Capacity (Nameplate) by Fuel Type
(“Active” in the PJM Queue as of April 1, 2023)

- Solar, 17,063 MW
- Storage, 8,236 MW
- Wind, 9,025 MW
- Natural Gas, 320 MW

Total: 34,644 MW
Illinois – 2022 Generator Deactivations
# Illinois – 2022 Generator Deactivations

<table>
<thead>
<tr>
<th>Unit</th>
<th>TO Zone</th>
<th>Fuel Type</th>
<th>Request Received to Deactivate</th>
<th>Actual or Projected Deactivation Date</th>
<th>Age (Years)</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joliet 8</td>
<td></td>
<td>Natural Gas</td>
<td>7/25/2022</td>
<td>6/1/2023</td>
<td>56</td>
<td>550.0</td>
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<tr>
<td>Joliet 7</td>
<td></td>
<td>Natural Gas</td>
<td>7/25/2022</td>
<td>6/1/2023</td>
<td>57</td>
<td>550.0</td>
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<tr>
<td>Joliet 6</td>
<td></td>
<td>Methane</td>
<td>12/30/2021</td>
<td>3/31/2022</td>
<td>63</td>
<td>281.0</td>
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<tr>
<td>Solberg 1 BT</td>
<td>ComEd</td>
<td>Battery</td>
<td>11/8/2022</td>
<td>12/20/2022</td>
<td>4</td>
<td>1.0</td>
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<tr>
<td>Orchard Hills LF</td>
<td></td>
<td>Methane</td>
<td>12/30/2021</td>
<td>3/31/2022</td>
<td>5</td>
<td>9.3</td>
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<tr>
<td>Joliet Energy Storage</td>
<td></td>
<td>Battery</td>
<td>11/9/2021</td>
<td>4/29/2022</td>
<td>6</td>
<td>0.0</td>
</tr>
<tr>
<td>West Chicago Energy Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>0.0</td>
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<tr>
<td>Will County 4</td>
<td></td>
<td>Coal</td>
<td>6/30/2021</td>
<td>6/30/2022</td>
<td>58</td>
<td>510.0</td>
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<tr>
<td>Waukegan 8</td>
<td></td>
<td>Coal</td>
<td>6/30/2021</td>
<td>5/31/2022</td>
<td>59</td>
<td>354.4</td>
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<tr>
<td>Waukegan 7</td>
<td></td>
<td>Coal</td>
<td>6/30/2021</td>
<td>5/31/2022</td>
<td>63</td>
<td>328.0</td>
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</tbody>
</table>
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
Illinois – RTEP Baseline Projects

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

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.
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.
Illinois – Merchant Transmission Project Requests

<table>
<thead>
<tr>
<th>Queue Number</th>
<th>Queue Name</th>
<th>TO Zone</th>
<th>Status</th>
<th>Actual or Requested In-Service Date</th>
<th>Maximum Output (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFI-200</td>
<td>Piano 345 kV</td>
<td>ComEd</td>
<td>Active</td>
<td>1/31/2025</td>
<td>2,100</td>
</tr>
</tbody>
</table>
Planning
Load Forecast
PJM Annual Load Forecast
(Jan. 2023)

PJM RTO Summer Peak Demand Forecast

Load (MW)

- 2014
- 2015
- 2016
- 2018
- 2020
- 2022
- 2023

Years: 2014 to 2038

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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.
Markets
Capacity Market Results
2023/24 Base Residual Auction Clearing Prices ($/MW-Day)

- **RTO**: $34.13
- **BGE**: $69.95
- **MAAC**: $49.49
- **DPL-South**: $69.95
### 2023/24 Cleared MW (UCAP) by Resource Type

<table>
<thead>
<tr>
<th>Resource Type</th>
<th>ANNUAL (MW)</th>
<th>SUMMER (MW)</th>
<th>WINTER (MW)</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>
</tr>
<tr>
<td><strong>DR</strong></td>
<td>7,919.1</td>
<td>177.1</td>
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<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>131,777.4</td>
</tr>
</tbody>
</table>
2024/25 Base Residual Auction Clearing Prices ($/MW-Day)
## 2024/2025 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>131,779.3</td>
<td>38.2</td>
<td>605.6</td>
<td>132,423.1</td>
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<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>
Markets
Market Analysis
Note: The significant price spike in late Dec. 2022 was a result of Winter Storm Elliott's impact on system conditions.
Illinois’s average hourly LMPs were below 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 (2022) and represents only generators within the PJM portion of IL.
2005 – 2022 PJM Average Emissions

(March 2023)

Carbon Dioxide
Nitrogen Oxides
Sulfur Dioxide

CO₂ (lbs/MWh)
SO₂ and NOₓ (lbs/MWh)


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