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

May 2023

This report reflects information for the portion of Indiana within the PJM service territory.
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• **Existing Capacity:** Coal represents approximately 53.6 percent of the total installed capacity in the Indiana service territory while natural gas represents approximately 33.8 percent. Comparatively across PJM, natural gas and coal represent approximately 46.6 and 24.0 percent of capacity, respectively.

• **Interconnection Requests:** Solar represents 73.2 percent of the proposed generation requests in Indiana, while storage represents approximately 17.7 percent.

• **Deactivations:** Indiana had no generators deactivate or give a notice of deactivation in 2022.

• **RTEP 2022:** Indiana's 2022 RTEP project total represents approximately $234.86 million in investment.
• **Load Forecast:** Indiana’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.

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

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

• **1/1/22 – 12/31/22 Market Performance:** Indiana’s average hourly LMPs were generally lower than the PJM average hourly LMP.

• **Emissions:** Indiana’s average CO2 emissions slightly increased in 2022 compared to 2021 levels.
The PJM service area in Indiana is the AEP zone and is represented by the shaded portion of the Indiana 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)

- PJM: 184,833 MW
  - Natural Gas: 86,212 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
  - Waste: 802 MW

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Indiana – Existing Installed Capacity
(CIRs – as of Dec. 31, 2022)

IN
Total
7,062 MW

Coal, 3,782 MW
Natural Gas, 2,386 MW
Wind, 796 MW
Solar, 93 MW
Hydro, 5 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
Indiana Queued Capacity (Nameplate) by Fuel Type
(“Active” in the PJM Queue as of April 1, 2023)

- **Solar**: 22,881 MW
- **Storage**: 5,525 MW
- **Wind**: 2,088 MW
- **Natural Gas**: 771 MW

Total: 31,265 MW
Indiana – 2022 Generator Deactivations

Indiana 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: 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
Indiana – RTEP Baseline Projects

Note: Baseline upgrades are those that resolve a system reliability criteria violation.
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.
## Indiana – 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>AF1-088</td>
<td>Sullivan 345 kW</td>
<td>AEP</td>
<td>Active</td>
<td>12/31/2025</td>
<td>1,000</td>
</tr>
<tr>
<td>AF2-088</td>
<td>Sullivan 345 kW</td>
<td>AEP</td>
<td>Active</td>
<td>12/31/2025</td>
<td>2,000</td>
</tr>
</tbody>
</table>
Planning
Load 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.
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>Resource Type</th>
<th>ANNUAL (MW)</th>
<th>SUMMER (MW)</th>
<th>WINTER (MW)</th>
<th>Total (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td>131,256.3</td>
<td>47.0</td>
<td>474.1</td>
<td>131,777.4</td>
</tr>
<tr>
<td>DR</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>EE</td>
<td>5,221.1</td>
<td>250.0</td>
<td>0.0</td>
<td>5,471.1</td>
</tr>
<tr>
<td>Total (MW)</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)

- **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>
<tr>
<th></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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></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>
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<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>
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<tr>
<td><strong>Total (MW)</strong></td>
<td>146,873.3</td>
<td>605.6</td>
<td>605.6</td>
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</tr>
</tbody>
</table>
Markets
Market Analysis
Indiana – 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.
Indiana’s average hourly LMPs were generally lower than the PJM average hourly LMP.
This chart reflects the portion of Indiana that PJM operates. Positive values represent exports and negative values represent imports.
Operations
Indiana – 2022 Generator Production

The data in this chart comes from EIA Form 923 (2022) and represents only generators within the PJM portion of IN.

- Natural Gas, 48.7%
- Coal, 36.9%
- Wind, 12.7%
- Solar, 1.5%
- Oil, 0.1%
2005 – 2022 PJM Average Emissions
(March. 2023)

CO₂ (lbs/MWh)

SO₂ and NOₓ (lbs/MWh)

- Carbon Dioxide
- Nitrogen Oxides
- Sulfur Dioxide


- CO₂ emissions decreased from approximately 1,300 lbs/MWh in 2005 to 0.0 lbs/MWh in 2022.
- NOₓ emissions decreased from approximately 9.0 lbs/MWh in 2005 to 0.0 lbs/MWh in 2022.
- SO₂ emissions decreased from approximately 7.5 lbs/MWh in 2005 to 0.0 lbs/MWh in 2022.
Indiana – Average Emissions (lbs/MWh)
(March 2023)

- Carbon Dioxide
- Nitrogen Oxides
- Sulfur Dioxide

CO₂ (lbs/MWh)

SO₂ and NOₓ (lbs/MWh)