New York ISO
Independent System Operator

# Generator Transition Rate Matrices: Impact Analysis

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# Background

- Effective October 2025, the NYISO transitioned to a new generator availability data reporting software known as PowerGADS, following the retirement of the Generator Availability Data System Open Source (GADS OS) software.
  - Benchmarking of PowerGADS was presented at the April 28, 2026 ICS meeting.[1]
  - ICS members requested an impact breakdown of the transition to PowerGADS and the update to the 5-year average EFORdAPA[2] from 2020-2024 data to 2021-2025 data.
- The purpose of today's presentation is to review preliminary results.

1. https://www.nysrc.org/wp-content/uploads/2026/04/PowerGADS_MARS_Matrices-04282026-ICS.pdf
2. EFORdAPA is a resultant metric using the capacity states and transitional probabilities that are directly used in the MARS model.

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# Transition to PowerGADS



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# Transition to PowerGADS Impact

- **To assess the impact of the transition to PowerGADS, the NYISO conducted a parametric assessment of the impact using the 2026-2027 IRM Final Base Case (FBC) Special Sensitivity Case.**
  - The assessment is conducted using the updated transition matrix from PowerGADS, with the same GADS data used for the transition matrix in the 2026-2027 IRM FBC Sensitivity Case (2020-2024)
  - Updated EFORd calculated with PowerGADS is also used in the parametric assessment
- **The transition to PowerGADS produced a modest increase in the IRM, reflecting incremental changes in how forced outage behavior is represented with the new PowerGADS. The overall impact is limited in magnitude.**
  - As discussed at the April 28, 2026 ICS meeting, the PowerGADS system includes software differences and deliberate codes enhancements compared to the GADS OS.

| Case | IRM (%) | J LCR (%) | K LCR (%) | G-J LCR (%) |
|---|---|---|---|---|
| 2026-2027 IRM FBC Special Sensitivity Case (with GADS OS transition matrix using 2020-2024 data) | 25.60 | 79.85 | 107.50 | 89.22 |
| Parametric Test Case for PowerGADS Transition (with PowerGADS transition matrix using 2020-2024 data) | 25.75 | 79.88 | 107.64 | 89.30 |
| *Delta* | *+0.15* | *+0.03* | *+0.14* | *+0.08* |

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# 5-Year Outage Data Update *(2020-2024 vs. 2021-2025)*



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# 5-Year Outage Data Update

- **For the 2027-2028 IRM study, generator outage data will be updated from the 2020-2024 dataset to 2021-2025 dataset.**
  - The transition matrix will be updated with the 2020 data rolled off and 2025 data rolled in.
- **The NYISO reviewed the forced outage data between 2020 and 2025 and concluded that forced outages in 2025 were significantly higher than 2020 (discussed further on the next slide).**
- **Therefore, when updating the 5-year outage data for the 2027-2028 IRM Preliminary Base Case (PBC), the IRM and locational requirements increased in the range of 1%-2%.**
  - Such impact is consistent with the changes in the underlying fleet performance assumption.
  - Load Zones J, K and the G-J Locality experienced the largest impacts, consistent with the fleet's performance in the respective areas.

| Case | IRM (%) | J LCR (%) | K LCR (%) | G-J LCR (%) |
|---|---|---|---|---|
| 2026-2027 IRM FBC Special Sensitivity Case (with GADS OS transition matrix using 2020-2024 data) | 25.60 | 79.85 | 107.50 | 89.22 |
| Parametric Test Case with Updated Outage Data[3] (with PowerGADS transition matrix using 2021-2025 data) | 26.90 | 81.28 | 109.53 | 90.81 |
| *Delta* | *+1.30* | *+1.43* | *+2.03* | *+1.59* |

3. The reported results reflect two changes: (1) transitioning from GADS OS to PowerGADS, and (2) the outage data update. (see Slide 4 for the impact assessment specifically due to the PowerGADS transition).

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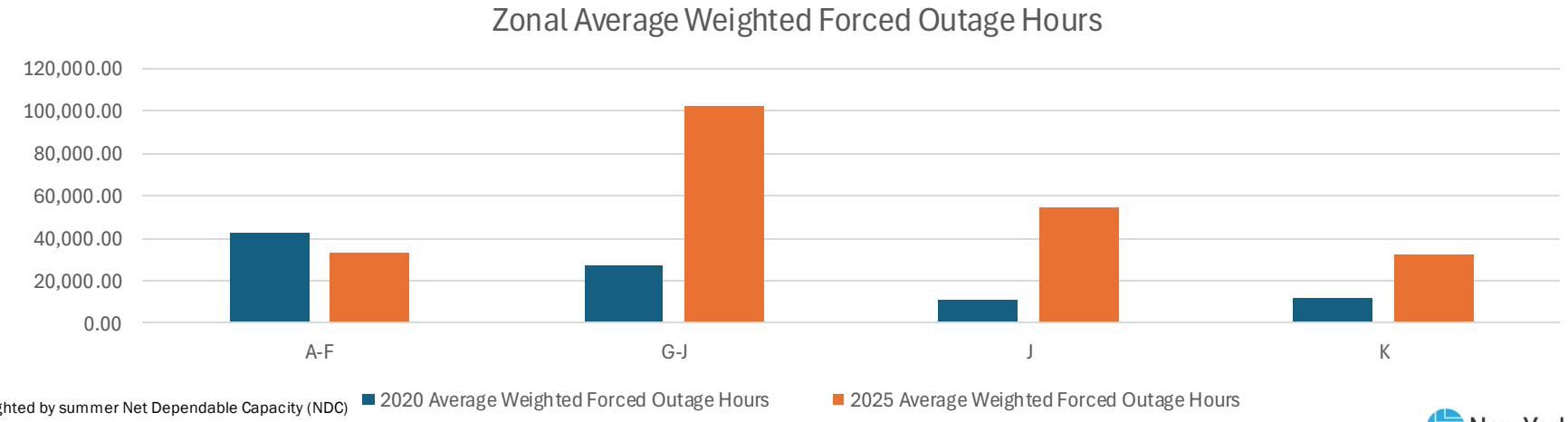
# Zonal Forced Outage Comparison (2020 vs 2025)

- 2025 forced outage levels are significantly higher than 2020 across multiple zones, driven by increased frequency and duration of forced outage events.
- This is consistent with the increase in derates observed in the NYISO's Summer 2026 Capacity Assessment.[4]
  - The assessment notes a 580 MW reduction in the capacity margin for the baseline assessment and 407 MW increase in the assumed level of unavailable capacity relative to the 2025 assessment.
- The below chart highlights the material increase in forced outage hours in 2025 compared to 2020 across Load Zones G through K




*Weighted by summer Net Dependable Capacity (NDC)

4. https://www.nyiso.com/documents/20142/57796669/S2026%20Capacity%20Assessment%20for%200C.pdf

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# Observations & Next Steps

- The new PowerGADS software is largely comparable to the historic GADS OS system, producing consistent inputs for the IRM study model
- Updating the 5-year outage data has a material impact on the IRM, due to significantly higher forced outage levels included in the updated dataset
- Next Steps:
  - Proceed with the 2027-2028 IRM PBC study and incorporate both the transition to PowerGADS and the most recent 5-year outage dataset in the base case.
  - Present parametric study results at the July 8, 2026 ICS meeting.

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# Questions?



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# Our Mission and Vision

## Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

## Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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