



# PJM Package D Implementation Considerations

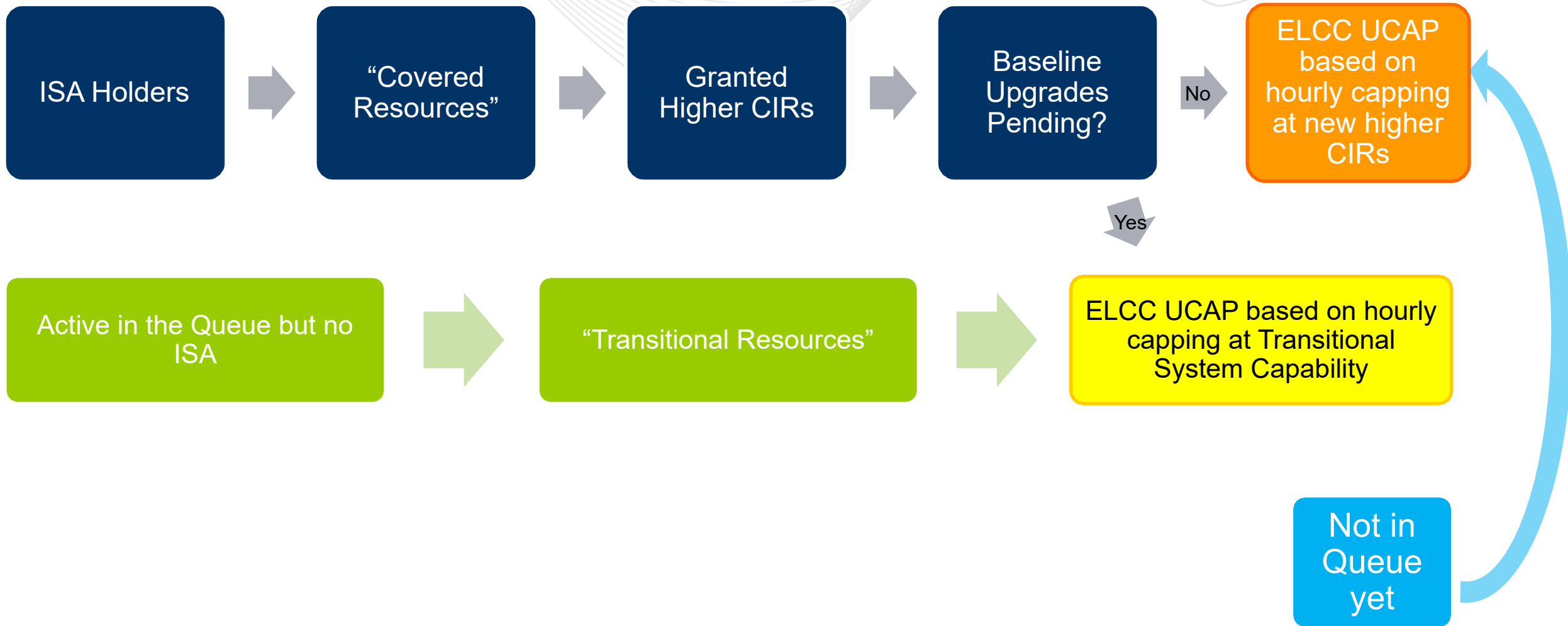
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PJM Planning Committee

- **Covered resources:** Wind and solar resources that have an ISA as of the effective date of this proposal
- **Transitional resources:** wind and solar units that, as of the effective date of this proposal, are active in the queue but do not have an ISA, and that submit a CIR uprate request into Cycle 1
  - Fast Track, Transition Cycle 1 and Transition Cycle 2
- **Transition period:** Approximately four years starting with the effective date of this proposal
  - Example: From 1/1/2023 until 1/1/2027 or when the CIR uprate requests for transitional resources submitted into queue Cycle 1 are processed and eligible to participate in RPM

- **Transitional system capability:** Locational transmission system capability that is available in the full summer generator deliverability test (single contingency and common mode outage) for the applicable BRA Delivery Year during the transition period beyond that required to support CIRs
- **New default summer deliverability levels**
  - Based on the P80% for solar and offshore wind and P90% for onshore wind
    - Example: The P90% for a 100 MW onshore wind units in the Mid-Atlantic region is 38 MW
  - Sets the number of CIRs granted to covered units
  - Upper limit on transitional system capability for transitional resources



# Package D Proposal Summary for Wind/Solar— All statuses are “as of Effective Date”



- On effective date of proposal, Covered Resources will be granted higher CIRs that match the new default summer deliverability levels contingent on any required baseline upgrades being approved
  - These higher CIRs for Covered Resources will be available starting with the 2025/26 BRA. Some Covered Resources will be undeliverable prior to the necessary baseline upgrades going in service and they will be subject to ELCC capping at a value below the higher CIRs but above their requested CIRs
  - These higher CIRs for Covered Resources will not be introduced into the interconnection studies until Transition Cycle 2 and will not have any impact on the Fast Lane and Transition Cycle 1 studies, which will be continue to be performed under the status quo generator deliverability and CIR amounts

- Begin new gen deliv test with 2023 RTEP with higher CIRs for Covered Resources and come up with the required upgrades
  - 2023 RTEP will not be completed and ready for queue studies until mid-2024
  - PJM is expecting to start applying new gen deliv test for Transmission Cycle 2 at the end of 2024
    - Higher CIRs for the covered wind and solar units
    - Status quo CIRs for the remaining active queue units

**ELCC UCAP** for applicable resources will be based on hourly capping at **transitional system capability**, which is CIRs plus any extra capability otherwise available

For each BRA and Incremental Auction during the transition period, PJM will perform a summer gen deliv study to quantify transitional system capability

- Single contingencies and common mode outages consistent with interim CIR studies
- Initial study performed 7-8 months prior to BRA and a true-up study performed shortly before each BRA and IA to account for updates
- CIRs and interim CIRs will establish the baseline transmission usage, and Transitional System Capability for each Transitional Resource will be based on remaining available transmission headroom
  - Covered Resources treated as Transitional Resources until their required baseline upgrades from the 2023 RTEP approved & projected to be in service for applicable DY
  - CIR uprates for transitional wind and solar resources are not presumed deliverable unless the required network upgrades from queue Cycle 1 are projected to be in service for the DY

- It is expected that the 2023 RTEP will be completed early in 2024 and be available for transitional system capability studies by the Fall of 2024
- For transitional system capability studies for Delivery Years prior to 2028/29 PJM will use the status quo gen deliv and starting with the 2028/29 DY PJM will use the new gen deliv



# Appendix 1: Timelines





# Package D Transition Period Considerations

	Date	Activity	Impacted Processes	Gen Deliv Method	CIRs For Covered Resources	CIRs For Transitional Resources
<b>2023</b>	Jan	Anticipated effective date of proposed changes	RTEP/RPM/Queue	New	New	Old
	Jan	Begin 2023 RTEP	RTEP	New	New	Old
	May	Begin Fast Lane queue processing	Queue	Old	Old	Old
	May	Finalize transitional system capability study for 2025/26 BRA	RPM	Old	New	Transitional system capability up to P80/P90%
	Jun	2025/26 BRA	RPM		New	Transitional system capability up to P80/P90%
	Oct	Finalize transitional system capability study for 2026/27 BRA	RPM	Old	New	Transitional system capability up to P80/P90%
	Nov	2026/27 BRA	RPM		New	Transitional system capability up to P80/P90%
<b>2024</b>	Jan	Begin 2024 RTEP	RTEP	New	New	Old
	Jan	Begin Transition Cycle 1 queue studies	Queue	Old	Old	Old
	Mar	Finish 2023 RTEP	RTEP	New	New	Old
	Apr	Finalize transitional system capability study for 2027/28 BRA	RPM	Old	New	Transitional system capability up to P80/P90%
	May	2027/28 BRA	RPM		New	Transitional system capability up to P80/P90%

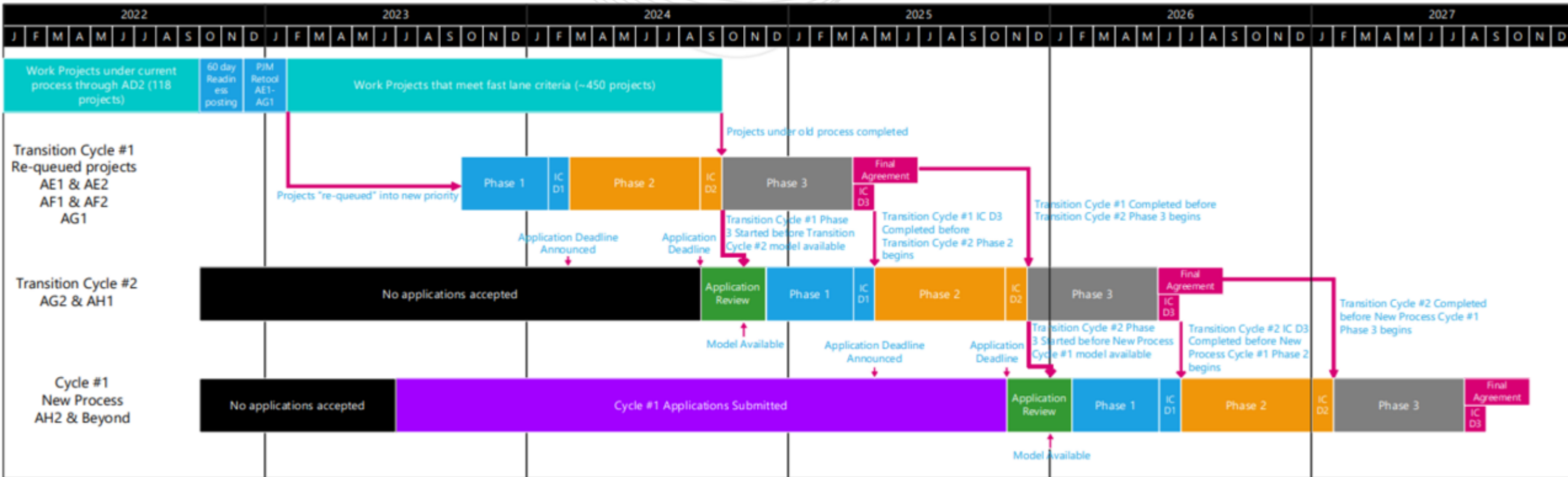
\* Incremental Auctions for RPM not shown in timeline but each will require and interim CIR and transition system capability study



# Package D Transition Period Considerations

	Date	Activity	Impacted Processes	Gen Deliv Method	CIRs For Covered Resources	CIRs For Transitional Resources
<b>2025</b>	Jan	Begin 2025 RTEP	RTEP	New	New	Old
	Mar	Finish 2024 RTEP	RTEP	New	New	Old
	Mar	Begin Transition Cycle 2 queue studies	Queue	New	New	Old
	Apr	Finalize transitional system capability study for 2028/29 BRA	RPM	New	New	Transitional system capability up to P80/P90%
	May	2028/29 BRA	RPM		New	Transitional system capability up to P80/P90%
<b>2026</b>	Jan	Begin 2026 RTEP	RTEP	New	New	Old
	Mar	Finish 2025 RTEP	RTEP	New	New	Old
	Apr	Finalize transitional system capability study for 2029/30 BRA	RPM	New	New	Transitional system capability up to P80/P90%
	May	Begin Cycle 1 queue studies	Queue	New	New	Requested
	May	2029/30 BRA	RPM		New	Transitional system capability up to P80/P90%
<b>2027</b>	Jan	Cycle 1 queue studies processed for RPM	Queue/RPM	New	New	Requested
	Apr	Finalize transitional system capability study for 2030/31 BRA	RPM	New	New	Requested
	May	2030/31 BRA	RPM		New	Requested

\* Incremental Auctions for RPM not shown in timeline but each will require and interim CIR and transition system capability study



- RPM participation for CIR updates
  - Greater than 20 MW require a Facility Study Agreement
  - Less than 20 MW require a System Impact Study Agreement

## RPM Schedule

BRA	Date
23/24	22-Jun
24/25	22-Dec
25/26	23-Jun
26/27	23-Nov
27/28	24-May
28/29	25-May
29/30	26-May
30/31	27-May

# Appendix 2: Example



- 100 MW MFO wind unit in Transition Cycle 1 requests a CIR uprate in Cycle 1
  - Original request for 15 MW CIRs
  - New request for P95% CIRs at 60 MW
- Original request for 15 MW
  - Studied under old gen deliv and CIR levels in TC1 queue study
  - Eligible to participate in the upcoming BRA since it's CIR are less than 20 MW and it has an System Impact Study Agreement already
  - CIR uprate request processed in Cycle 1 under new gen deliv in July 2026 and eligible to participate with capacity value based on hourly capping at the full 60 MW in 2030/31 BRA



## Transitional System Capability Study will be performed for BRAs starting with the 2025/26 BRA and ending with the 2030/31 BRA

- Initial study performed 7-8 months prior to BRA for inclusion in ELCC studies and true-up study performed shortly prior to BRA to account for updates
- CIRs and interim CIRs will establish the baseline transmission usage, and Transitional System Capability for each Transitional Resource will be based on remaining available transmission headroom
- Maximum potential Transitional System Capability capped at P90% or 38 MW for onshore wind units in the Mid-Atlantic region resulting in full UCAP of, e.g., 15 MW\*
  - *I.e., hourly values capped at 38 MW results in no significant reduction in UCAP vs. not capping*
- Minimum potential Transitional System Capability is CIR value (15 MW) resulting in UCAP of 8 MW
  - *I.e., hourly values capped at 15 MW results in significant reduction in UCAP*
- ELCC studies will cap hourly output of wind unit at this initial Transitional System Capability MW for defining ELCC Class UCAPs

*\*ELCC class ratings for wind will vary in time, 15% is current non-binding estimate for 25/26 delivery year.*

<https://www.pjm.com/-/media/planning/res-adeq/elcc/elcc-report-december-2021.ashx>

- Transitional System Capability Study will be performed for five BRAs starting with the 2025/26 BRA and ending with the 2029/30 BRA
  - Performed 7-8 months prior to BRA for inclusion in ELCC studies
  - CIRs and interim CIRs will establish the baseline transmission usage, and Transitional System Capability for each Transitional Resource will be based on remaining available transmission headroom
  - Maximum Transitional System Capability capped at P90% or 38 MW for onshore wind units in the Mid-Atlantic region
  - Minimum Transitional System Capability is 13 MW
  - ELCC studies will cap hourly output of wind unit at this initial Transitional System Capability MW for defining ELCC Class UCAPs

- True-up Transitional System Capability Study performed one month prior to each of the five BRAs and associated IAs
  - Same procedure as in the initial study but with updated assumptions
  - Full ELCC study will not be rerun and Performance Adjustment calculation will be revised as necessary
  - True-up Transitional System Capability will be used to establish upper limit on UCAP