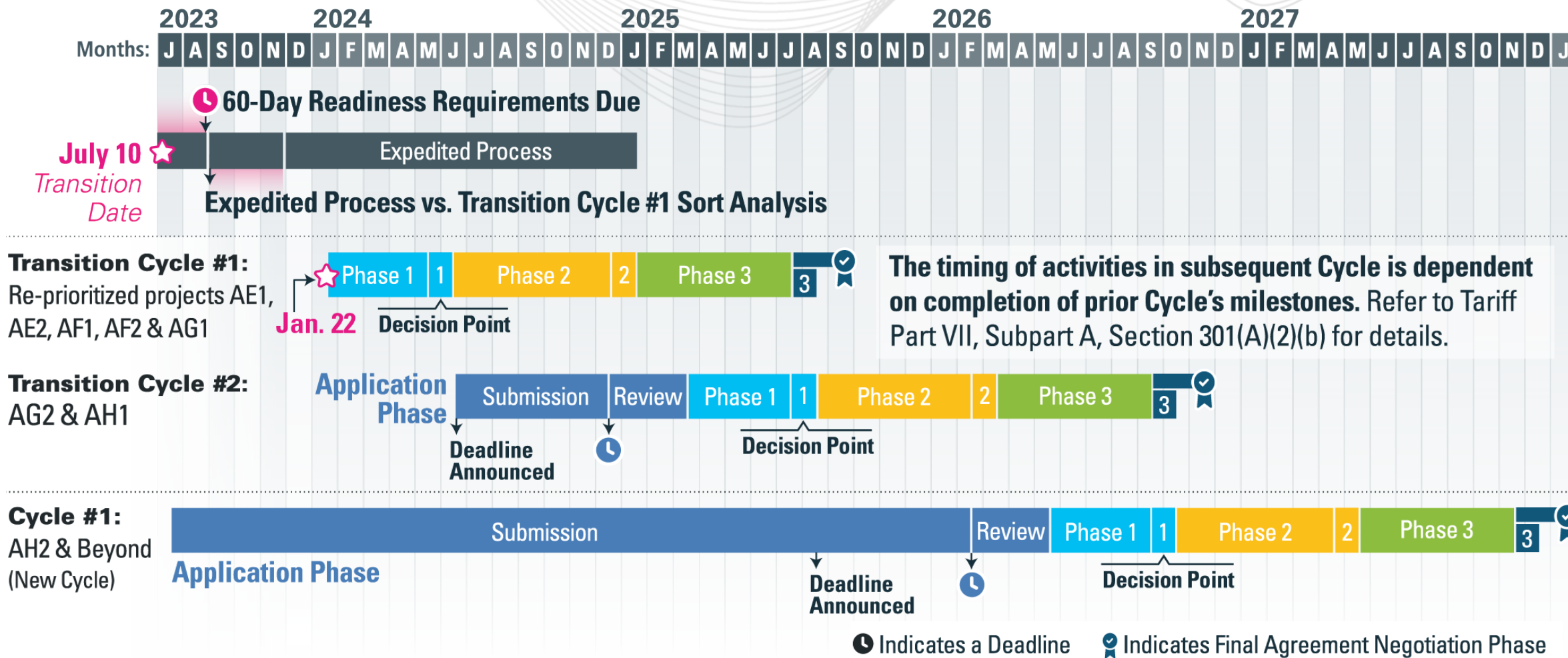




Interconnection Analysis

Expedited Process & Transition Cycle 1 Status

Heather Reiter, Senior Engineer
Interconnection Analysis
Interconnection Process Subcommittee
January 29, 2024



The timing of activities in subsequent Cycle is dependent on completion of prior Cycle's milestones. Refer to Tariff Part VII, Subpart A, Section 301(A)(2)(b) for details.

Refreshed Expedited Process Retool (AE1-AG1)

- Expedited Process SIS studies (in progress)
 - Approach studies in sequential order for projects with shared network upgrades
 - Prioritize projects that have Facilities Studies ready to go.
- Post updated queue cases/files in serial order (AE1/AE2 – week of 1/22)
- SIS reports posted to PJM.com (studies posted as available)
- PJM will notify Project Developers when study is available on PJM.com

Decision Point 1

- Review Project Developer QP data
- Update Phase 2 models with withdrawals and approved changes

Developers Notified
Cluster and individual SIS reports on PJM.com – mid May

Jan 2024

Feb 2024

Mar 2024

Apr 2024

May 2024

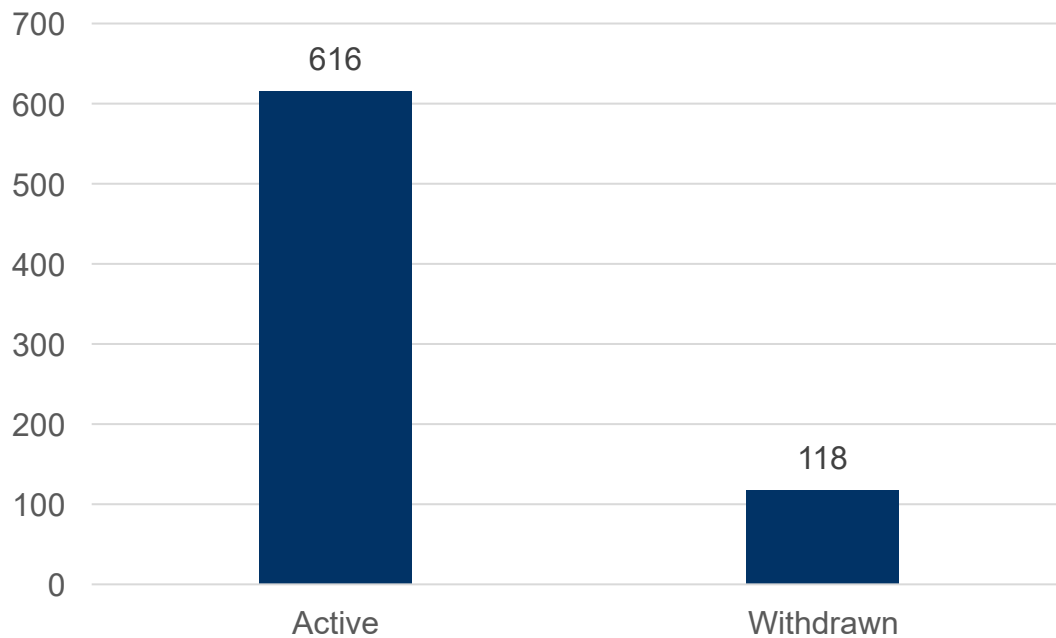
Transition Cycle #1 Analysis (Phase 1)

- TC1, Phase 1 SIS start (January 22)
- Post TC1 SP and LL case/files (week of January 29th)
- TO Analysis Review of PJM Results (Feb - April)
- PJM Prepares Phase 1 SIS cluster and individual reports – (April/May)
- PJM Posts Phase 1 SIS cluster and individual reports – mid May

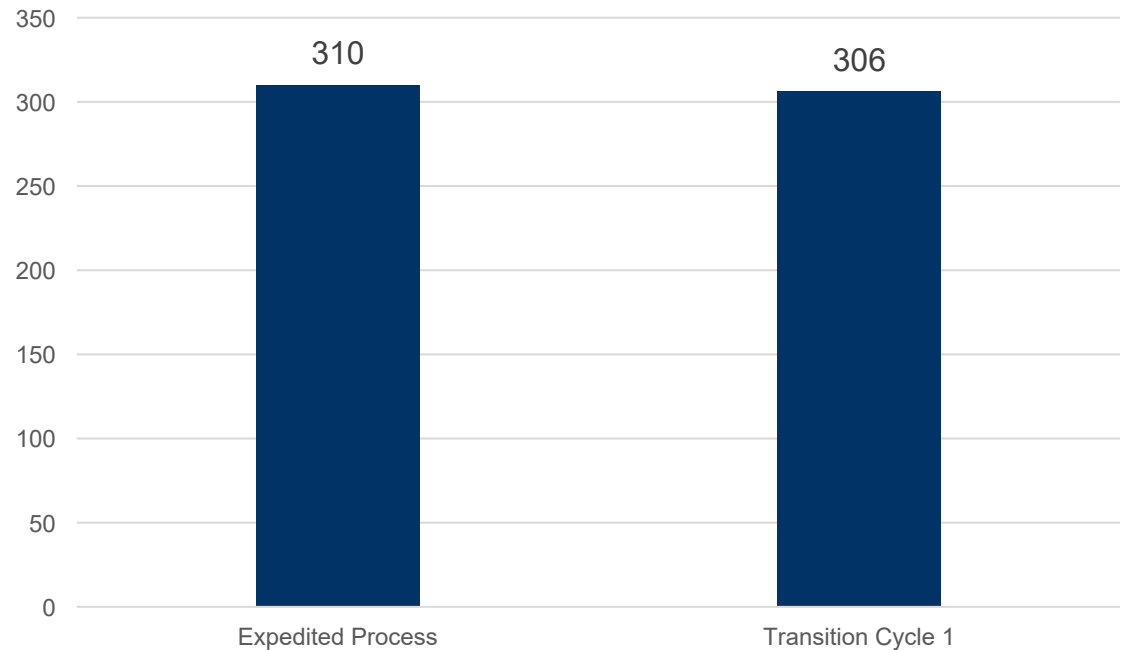
January - May 2024: Transition Cycle #1 Model Building (SC, Stability)

- Transition Sort Retool Reports are available on: [PJM.com>planning>Service Requests> Expedited Process/TC1 Classification](https://www.pjm.com/planning/Service%20Requests/Expedited%20Process/TC1%20Classification)

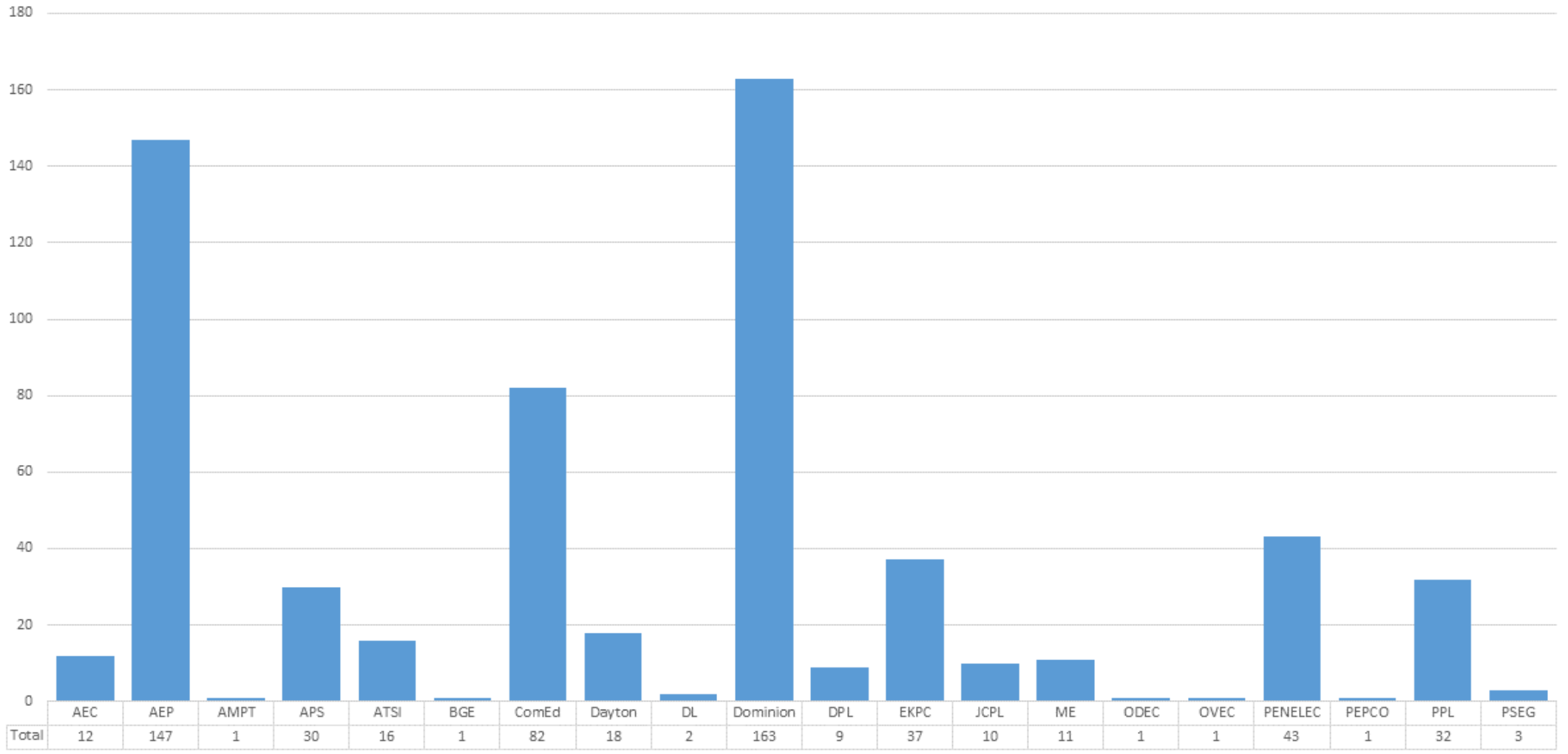
Active/ Withdrawn Projects



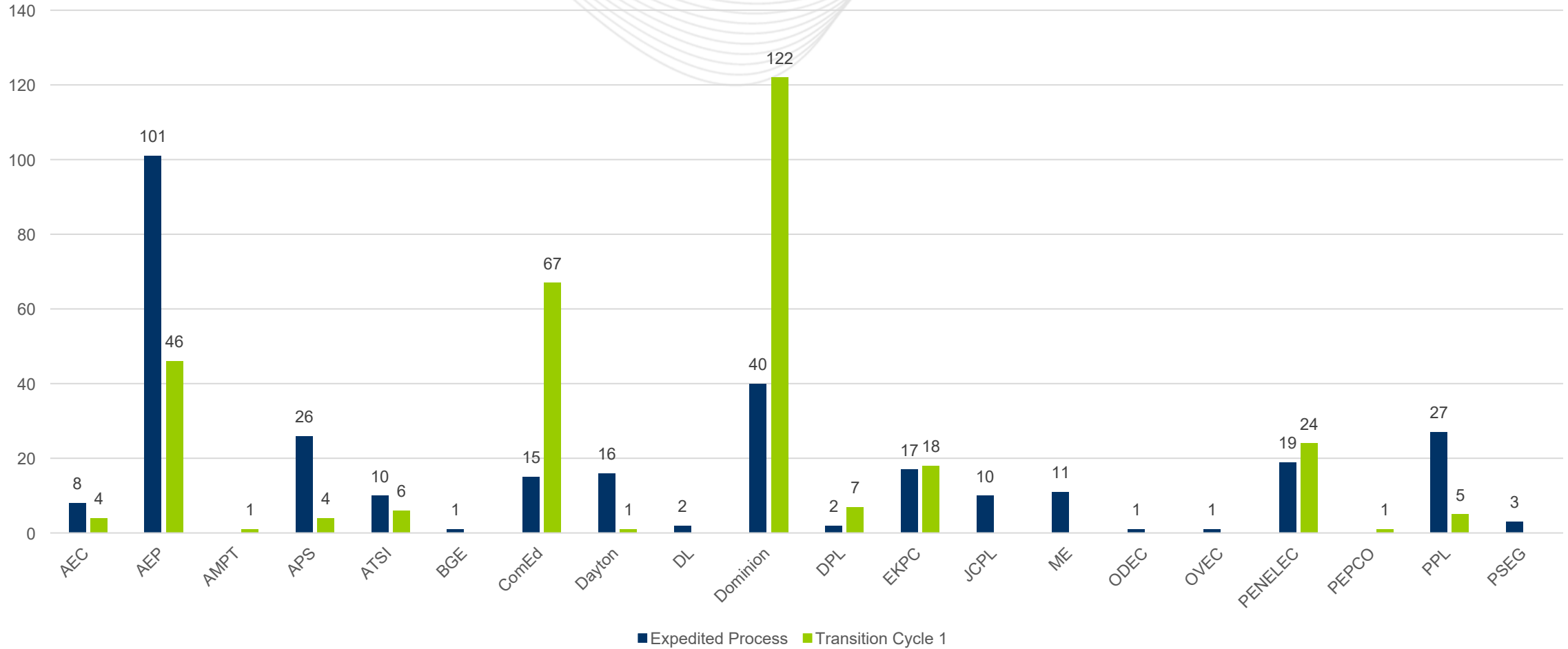
Expedited Process / TC1 Classification



Transition Sort Retool Projects by TO Area



Expedited Process / TC1 Classification



- **Refreshed Expedited Process Retool (Started Mid-December 2023)**
 - Serial Study Process and Cost Allocation
 - TC1 projects are lifted from the AE1-AG1 cases to run the Expedited Process analysis
 - Load Flow, Short Circuit, and Stability will be completed for Expedited Process eligible projects during retool
 - Based on final SIS analysis results (LF/SC/Stability) and Facility studies (by TOs), any projects that do receive cost allocation for network upgrades > \$ 5mil will shift to TC1 (Includes TO analysis results)
 - Expedited Process projects will receive SIS report after all analysis is completed, followed by Facilities Study Report (if required) and final GIA/WMPA.

- Expedited Process SIS reports will include PJM network impact analysis results along with cost allocation for required system reinforcements(Network Upgrades).
- Expedited Process SIS reports will not include any physical Interconnection Facilities scope or cost estimates.
- Facilities Studies will be conducted by the TO for updated physical Interconnection Facilities and System Reinforcement (Network Upgrade) costs.
- Facilities Study will be issued to Project Developers along with the GIA as part of Expedited Process.

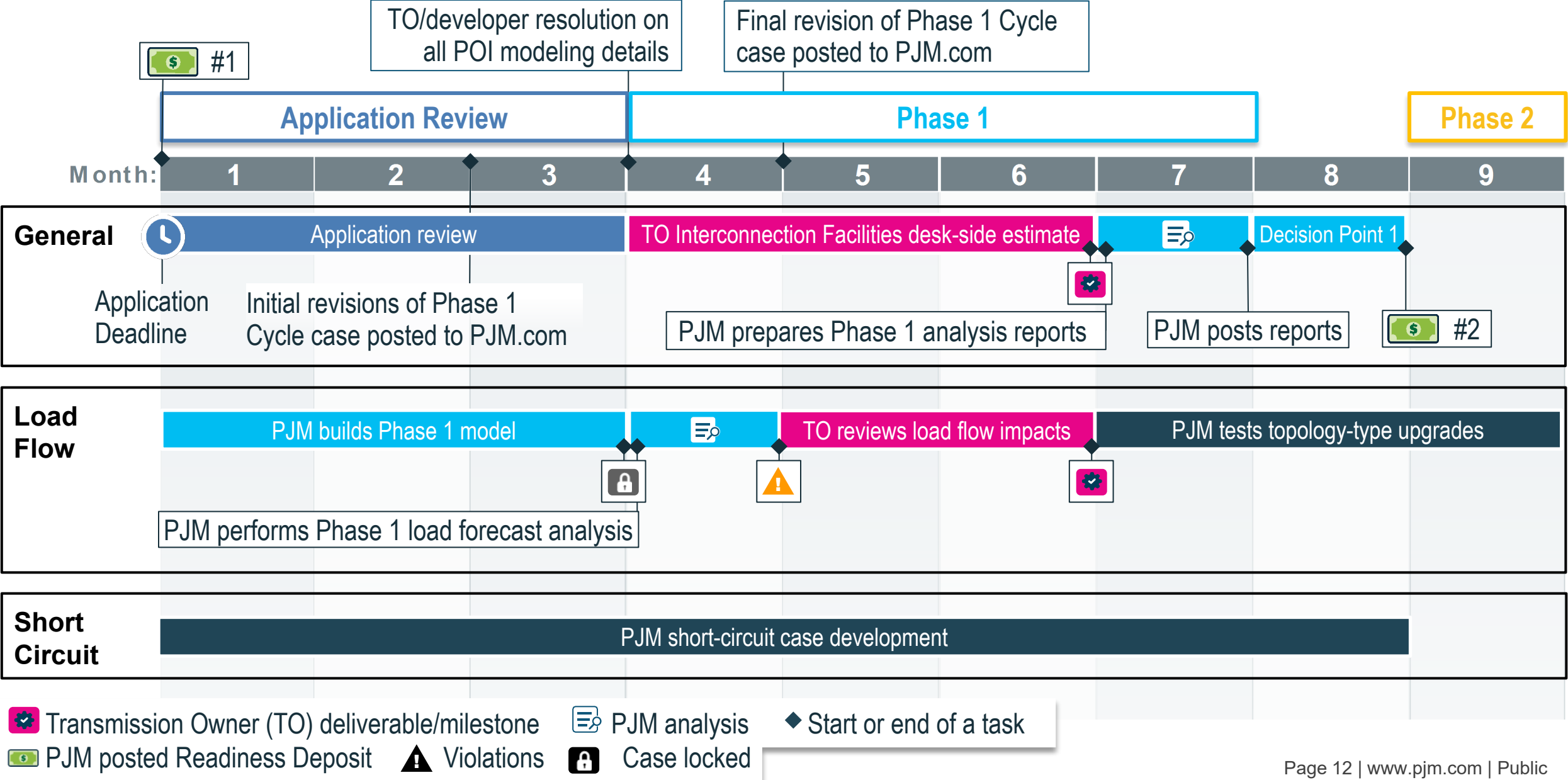
- **Transition Cycle #1 (2024-2025)**

- Phase 1 System Impact Study started January 22nd
- Contains AE1-AG1 projects that were not eligible for the Expedited Process
- Cluster study approach under reformed process
- Studied on 2027 RTEP base case
- Load Flow analysis will be completed for SP/LL using legacy GenDeliv test
- Short Circuit and Stability analyses will be completed using cluster study methodology

- **AE1-AG1 projects classified as TC1 currently have the opportunity to submit updated dynamic model data to PJM prior to TC1/DP1 in accordance with the *PJM Dynamic Model Development Guidelines*. See Pardot notification sent on 12/22/2023.**
- TC1 Project Developers are requested to please submit updated dynamic models by **February 16th**.
- Please notify your PJM Project Manager if you have submitted an updated model in Queue Point.
- Project Developers will need to follow the Dynamic Model Development Guidelines document posted on PJM.com (<https://www.pjm.com/-/media/planning/services-requests/pjm-dynamic-model-development-guidelines.ashx>)

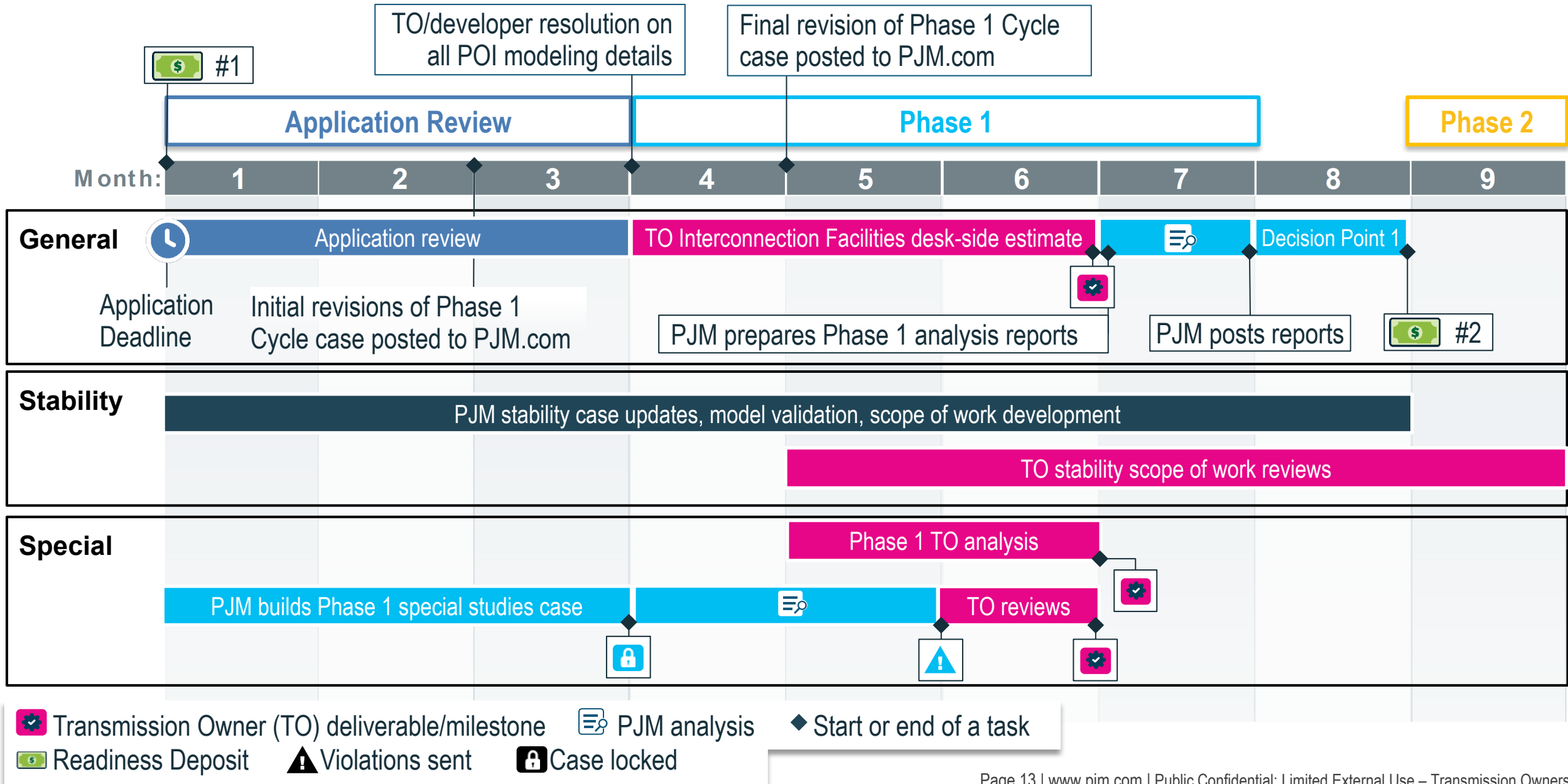
Phase 1 Analysis

Phase 1 Analysis Timeline



- Transmission Owner (TO) deliverable/milestone
- PJM posted Readiness Deposit
- Violations
- PJM analysis
- Case locked
- Start or end of a task

Phase 1 Analysis Timeline (cont'd)



Model Availability and Study Approach



Load Flow Model Details & Target Availability

- Refreshed Expedited Process Models – January/February/March
 - Models will be built on SIS Impact Models and only consist of AE1-AG1 Expedited Process projects only, all TC#1 projects are removed from these models
 - AE1/AE2 SP and LL posted week of January 22nd
- Transition Cycle #1 Model Post - week of January 29th
 - Model will be built on 2027 RTEP Model and consist of active AE1-AG1 projects
 - Summer Peak and Light Load will be posted.

Availability:

- **AE1/AE2/AF1/AF2/AG1 cases and files will be posted to PJM website – Cell Access Required**
- **TC1 case and files will be posted to the PJM Website – Cell Access Required**

PJM WILL...

- Post cases to PJM.com once prepared to share.

Files are CEI and require completing a PJM CEI Request Form.

The screenshot shows a website navigation menu on the left and content on the right. The menu items are: Services & Requests, Project Status & Cost Allocation, Competitive Planning Process, RTEP Development (highlighted), Stakeholder Process, Market Efficiency, Baseline Reports, Modeling Data (highlighted), Multiregional Modeling Working Group Base Cases, Queue Base Cases, Resource Adequacy Planning, Planning Criteria, Design, Engineering & Construction, and Interregional Planning. The right side shows the breadcrumb path: Home > Planning > RTEP Development > Modeling Data. Below this is the title 'Modeling Data' and a sub-section 'Baseline Cases' with a description of the RTEP process. A link 'View baseline cases' is shown with a lock icon and the note '- requires additional access'. Another sub-section 'Queue Base Cases' is described, followed by a link 'View specific PJM queue base case and contingency files' with a lock icon and the note '- requires additional access'. The final sub-section is 'Multiregional Modeling Working Group Cases' with a description and a link 'View the MWWG cases access protocol'.

Cycle	RTEP Base Model	Analysis Tools & Methodology
TC1	2027	Transition Cycle #1 will be performed using TARA GenDeliv under the current generation deliverability procedure for Summer Peak Analysis, and Light Load will use PJM's Legacy Tool.
TC2	2028	Transition Cycle #2 and beyond will be performed using TARA GenDeliv under the new generation deliverability procedure.
Cycle 1	TBD	

New Generation Deliverability Procedure Refer to Manual 14B, Attachment C.3

Category	Study	Type of Analysis		RTEP Base Case Year		Study Approach	Generator Deliverability Method	Cost Allocation		
Expedited Process	Transition Sort Retool¹ <u>Purpose:</u> Determine Expedited Process vs. TC1	Load Flow ²		AE1/AE2	2022	Serial	Legacy GD	Serial		
				AF1/AF2	2023					
				AG1	2024					
	Refreshed Expedited Process Retool³ <u>Reason:</u> Lift TC1 projects from model	Load Flow ²		AE1/AE2	2022	Serial	Legacy GD	Serial		
				Short Circuit					AF1/AF2	2023
				Stability ⁴					AG1	2024
Transition Cycles	Transition Cycle 1	Load Flow	Phases 1-3	New AE1-AG1	2027	Cluster	Legacy GD	Cluster		
		Short Circuit	Phases 2-3							
		Stability	Phases 2-3							
	Transition Cycle 2⁵	Load Flow	Phases 1-3	New AG2-AH1	2028 (anticipated)	Cluster	New GD ⁶	Cluster		
		Short Circuit	Phases 2-3							
		Stability	Phases 2-3							
New Cycle	Cycle 1	Load Flow	Phases 1-3	AH2 +	TBD	Cluster	New GD ⁶	Cluster		
		Short Circuit	Phases 2-3							
		Stability	Phases 2-3							

¹ The transition sort retool is only used to determine the disposition of the Expedited Process vs. TC1 study track for projects in the AE1-AG1 queues

² Load Flow studies will be run on both summer peak and light load model conditions

³ PJM M14H, Appendix I.3.4, **Expedited Process Rules** will apply for the Refreshed Expedited Process Analysis

- **Short Circuit / Stability Analysis:** If a short circuit, stability analysis, or sag study is completed during the expedited process, and it is determined that a reinforcement project is required that has an estimated Network Upgrade cost greater than \$5,000,000, the project will be removed from the Expedited Process and shifted to Transition Cycle #1
- **Facilities Study Estimates:** If it is determined during the Facilities Study that the cost of a Network Upgrade is now estimated to be greater than \$5,000,000, the project will be removed from the Expedited Process and shifted to Transition Cycle #1
- **Until the Project Developer receives a draft GIA, they are subject to being shifted to TC1 for any of the reasons above**
- **GIA:** Projects in the Expedited Process will have their Facilities Studies completed, and will be tendered an interconnection-related service agreement pursuant to Tariff, Part IX

⁴ PJM will apply updated model conditions to stability studies not yet performed at this stage. Stability will not be re-run if a project already received results

⁵ Load Flow studies are projected to be run on Summer Peak, Winter Peak, and Light Load models starting with Transition Cycle 2 and beyond

⁶ The new Generator Deliverability procedure was endorsed at the January 2023 MRC and is outlined in M14B

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