Interconnection Analysis
Transition Sorting Retool, Expedited Process, Transition Cycle 1 & Model Availability

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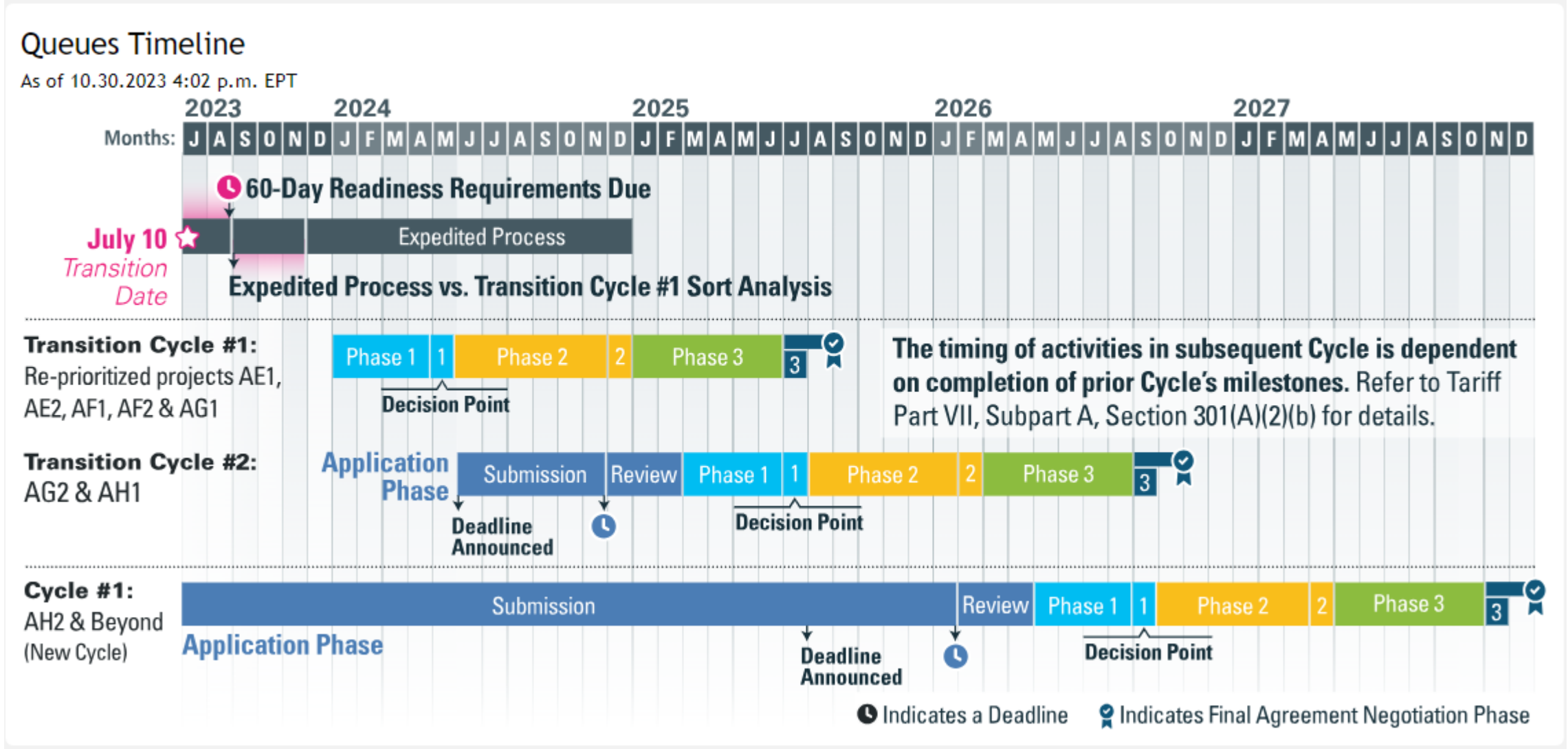
Interconnection Planning Analysis
Interconnection Process Subcommittee
December 21, 2023

Timeline Schedule



Analysis Timeline

Readiness Review Period

- Review of active AE1-AG1 projects for readiness requirements
- AE1-AG1 projects will address outstanding questions to fulfill readiness requirements

Developers Notified of Expedited Process Eligibility on Dec. 15th

Refreshed Expedited Process Retool

- TC1 projects will be lifted from Expedited Process study cases (AE1-AG1)
- Expedited Process projects will be retooled w/o TC1 projects

Sept. 2023 | **Oct.** 2023 | **Nov.** 2023 | **Dec.** 2023 | **Jan. – Apr.** 2024

Expedited Processing Eligibility (Transition Sort Retool)

- AE1-AG1 projects that have met readiness requirements will receive "Expedited Processing Eligibility Analysis" to sort projects into Expedited Process or TC1.
- Each queue will be analyzed on their own SIS study case

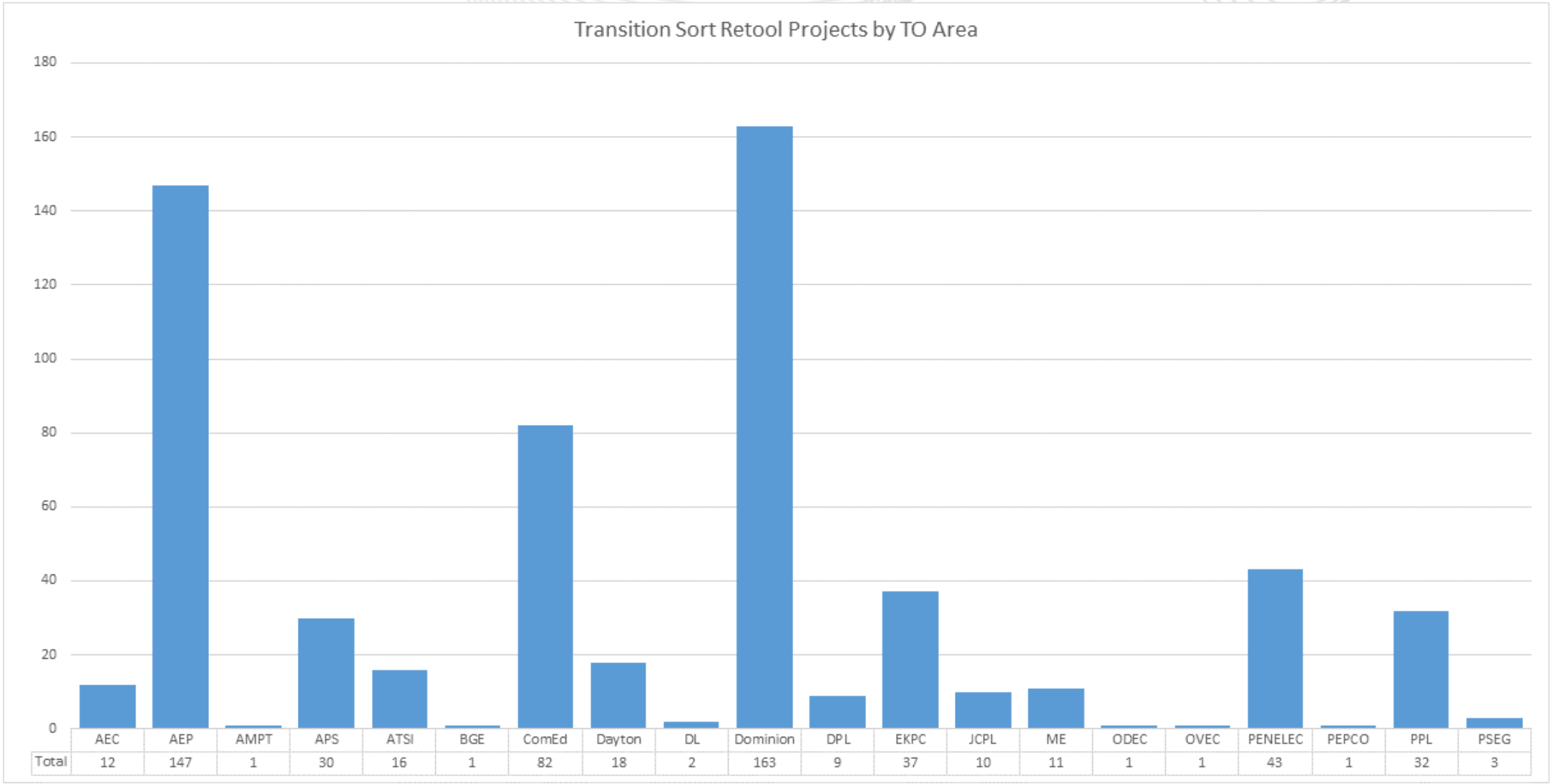
Transition Cycle #1 Analysis

Phase I analysis begins for final cohort of TC1 projects coming out of Transition Sort Retool

July–December 2023: Transition Cycle #1 Model Building (LF, SC, Stability)

Transition Sorting: Expedited Process vs. TC1

- **Transition Sort Retool (Oct-Nov-Dec 2023)**
  - Serial Study Process
  - 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 that have met readiness eligibility requirements
  - Only Load Flow analysis is completed for the transition sort retools (SP/LL)
  - A project is not eligible for the expedited process if
    - It has cost allocation or is first-to-cause for a network upgrade that has a total estimated cost > $5 mil
    - It is an uprate project and its base project is a TC1 project



	AEC	AEP	AMPT	APS	ATSI	BGE	ComEd	Dayton	DL	Dominion	DPL	EKPC	JCPL	ME	ODEC	OVEC	PENELEC	PEPCO	PPL	PSEG
Total	12	147	1	30	16	1	82	18	2	163	9	37	10	11	1	1	43	1	32	3

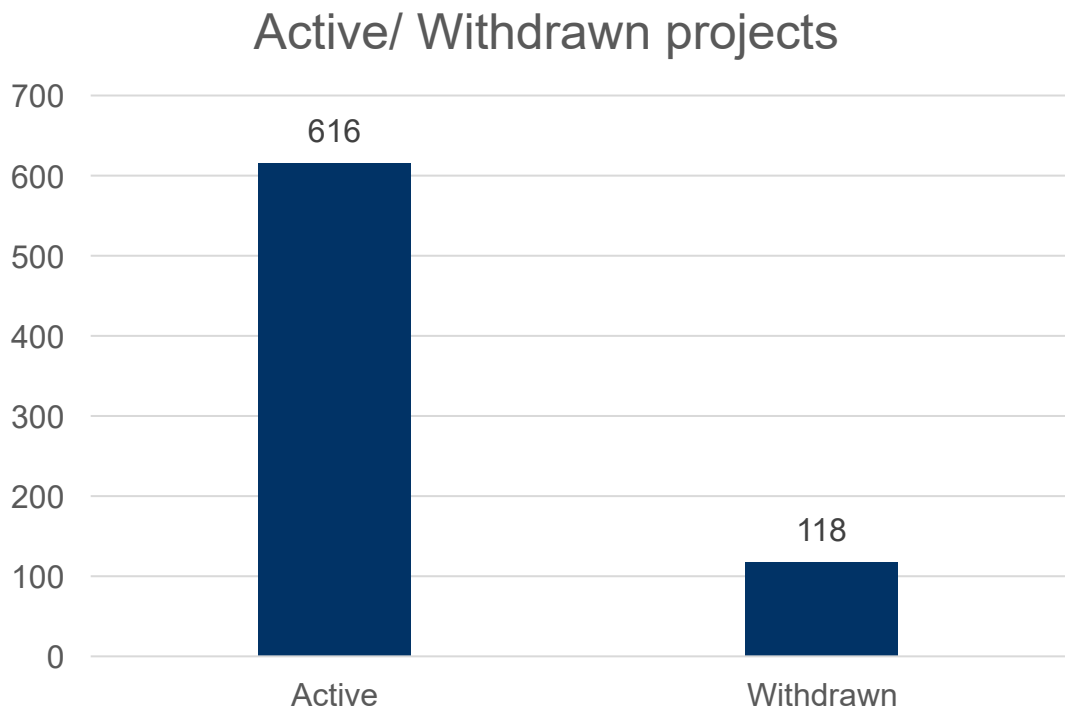
Transition Sort Retool Reports: Format

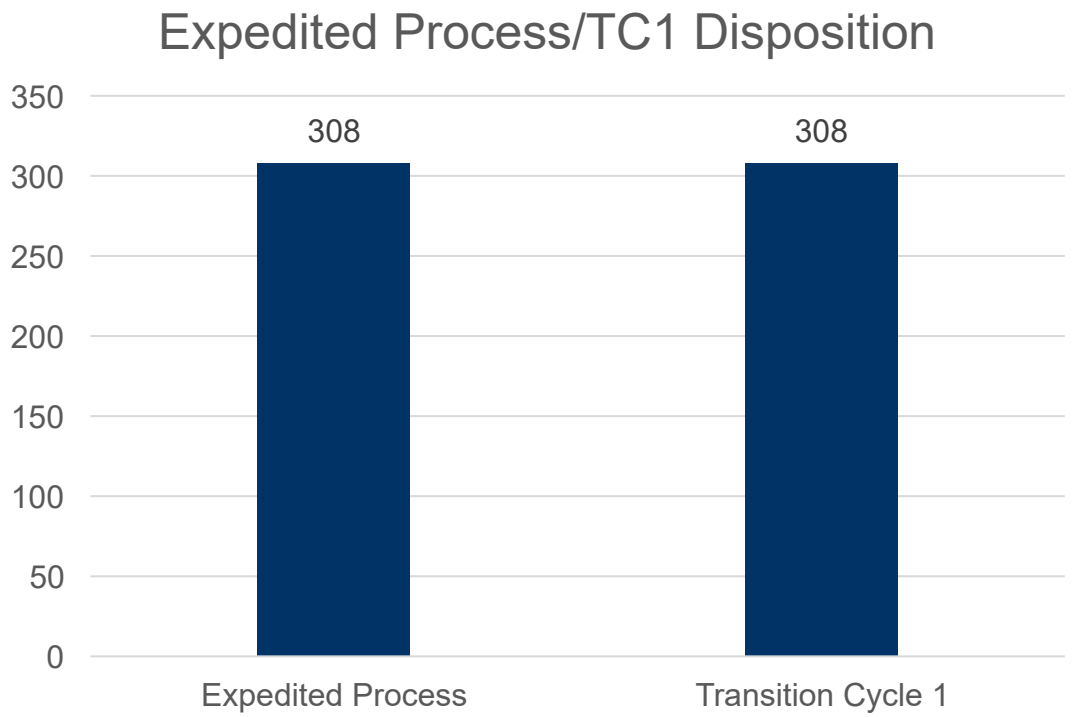
Transition Sort Retool Reports:

- Not meant to be a formal System Impact Study
- Purpose is to communicate whether a project is determined to be either:
  - (i) eligible for the Expedited Process or
  - (ii) reprioritized to Transition Cycle 1.
- Report will include a list of:
  - (i) the overloaded facilities identified,
  - (ii) other interconnection projects that may also contribute to the overloaded facility, and
  - (iii) the total estimated cost for any required Network Upgrades (no cost allocation provided).

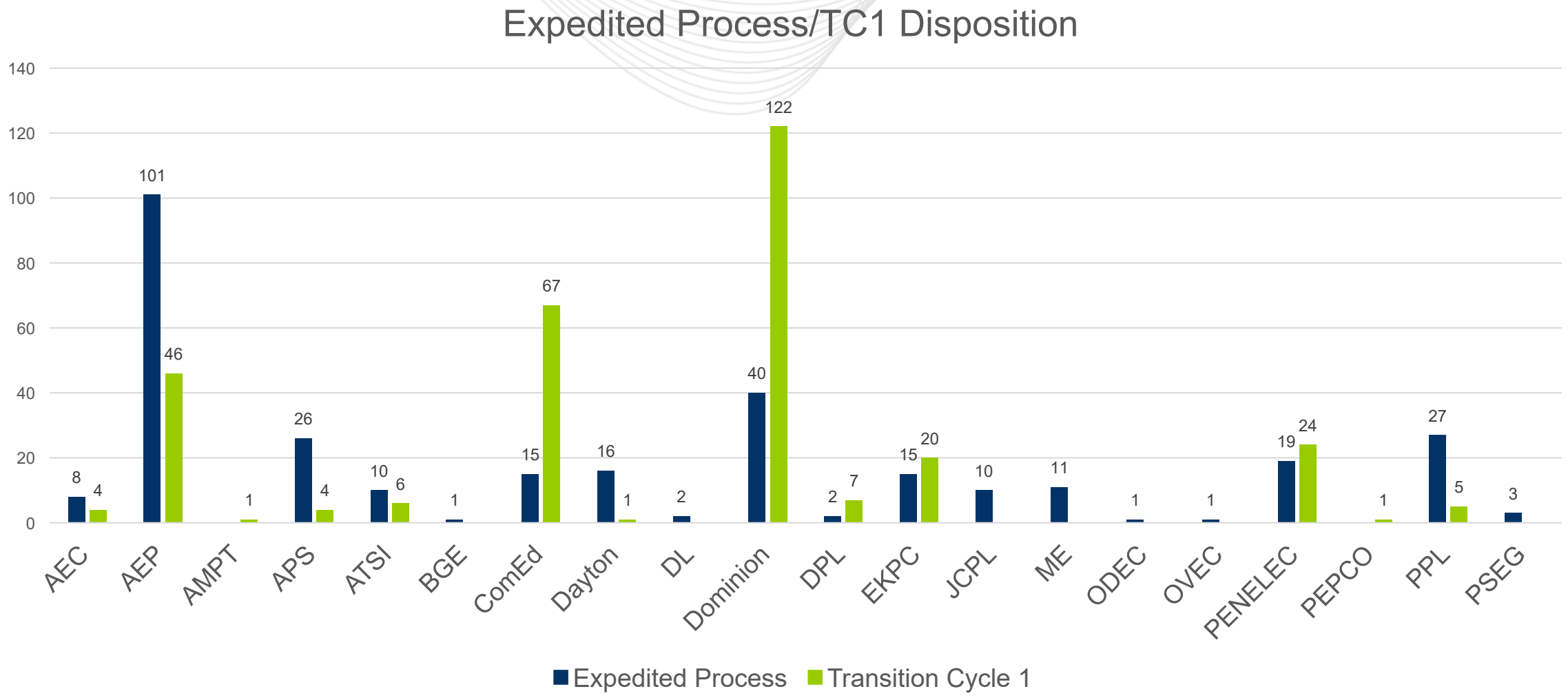
Transition Sort Retool Reports: Results and FAQ

- Transition Sort Retool Reports and FAQ are available on: [PJM.com>planning>Service Requests> Expedited Process/TC1 Classification]





Transition Sort Retool Reports: Results



Expedited Process

- **Refreshed Expedited Process Retool (Dec 2023 start – parallel with TC1)**
  - Serial Study Process and Cost Allocation
  - Now that Expedited Process & TC1 tracks are determined, the 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.

- **Transition Cycle #1 (2024-2025)**
  - Anticipated to start January 2024
  - 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

Model Availability and Study Approach

Load Flow Model Details & Target Availability

- Transition Sort Retool Models (Post #1) -
  - Models will be built on SIS Impact Models and consist of active AE1-AG1 projects before sorting
    - AE1/AE2 – Posted
    - AF1/AF2 – Posted
    - AG1 – Posted

- Refreshed Expedited Process Models (Post #2) - January
  - 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

- Transition Cycle #1 Model Post - January 2024
  - Model will be built on 2027 RTEP Model and consist of active AE1-AG1 projects

Availability:

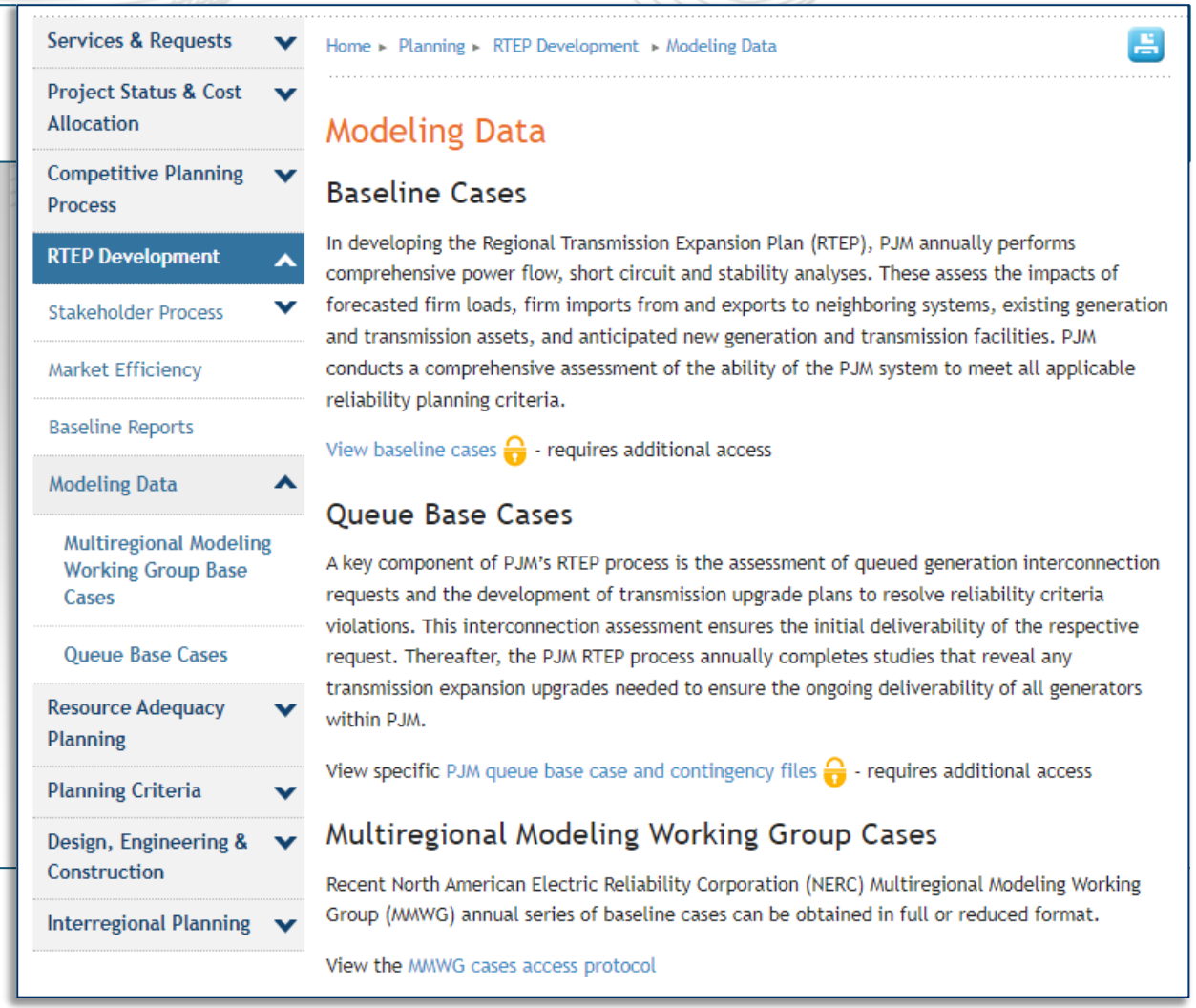
- ***AE1/AE2/AF1/AF2/AG1 cases and files will be posted to PJM website – CEII Access Required***
- ***TC1 case and files will be posted to the PJM Website – CEII Access Required***

Where To Find Planning Cases

PJM WILL…

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

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



Load Flow High-Level Case Assumptions

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

Study Approach Reference Guide

Category	Study	Type of Analysis		RTEP Base Case Year		Study Approach	Generator Deliverability Method	Cost Allocation
Expedited Process	**Transition Sort Retool**[1] Purpose: Determine Expedited Process vs. TC1	Load Flow[2]		AE1/AE2	2022	Serial	Legacy GD	Serial
				AF1/AF2	2023			
				AG1	2024			
	Refreshed Expedited Process Retool[3] Reason: 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 2[5]	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					

Study Approach Reference Guide (Cont'd)

[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

Updated Dynamic Model Data – TC1 projects

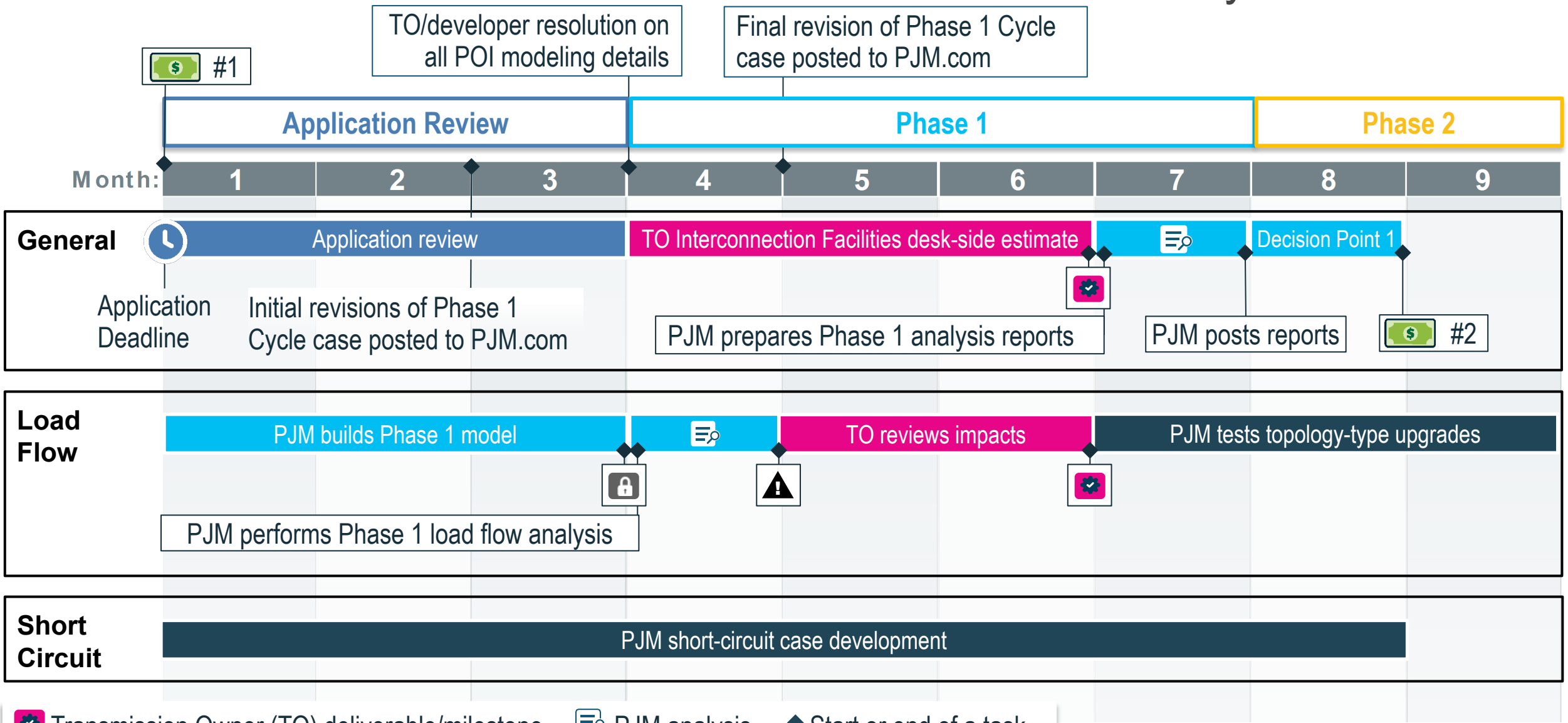
- **AE1-AG1 projects that are determined to be classified as TC1 will have the opportunity to submit updated dynamic model data to PJM prior to TC1/DP1 in accordance with the *PJM Dynamic Model Development Guidelines*.**

- PJM will reach out to TC1 Project Developers via Pardot Announcement once they are able to submit updated data.

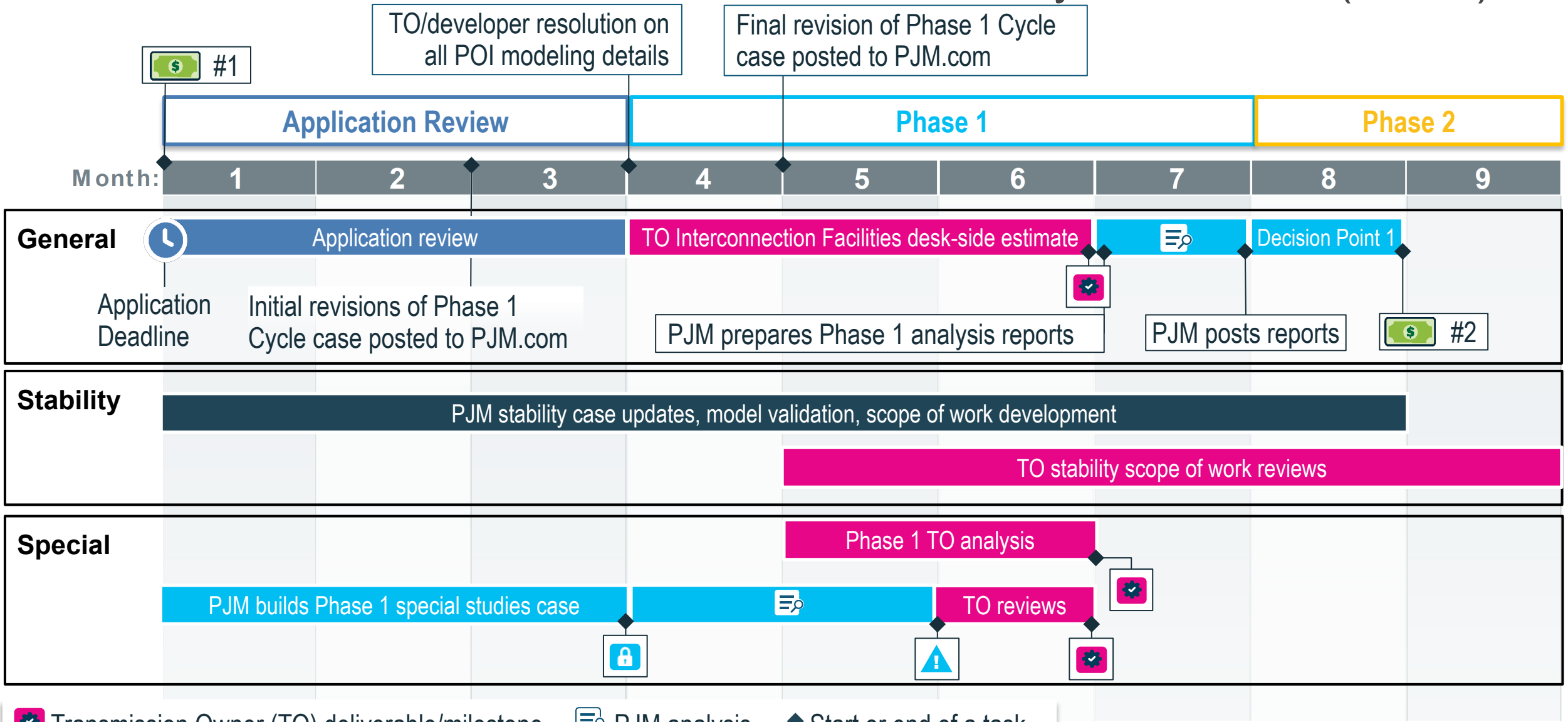
- Project Developers will need to follow the Dynamic Model Development Guidelines document posted on PJM.com (https://www.pjm.com/-/media/planning/services-requests/pjm-dynamic-model-development-guidelines.ashx)

Phase 1 Analysis

Phase 1 Analysis Timeline



Phase 1 Analysis Timeline (cont'd)



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