



PJM Transition Proposal Update

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- Goals of the transition proposal
- Review issues with previously proposed transition options
- Establish assumptions upon which the new option is based and walkthrough the new transition option

- Timely move to the newly proposed process
- Get backlogged generation through the queue and into the construction phase
- Eliminate speculation from the queue
- Reduce the time for closing the queue to as little as possible
- Balances projects that would have proceeded under existing rules but are delayed due to timing/other projects

- Time to move to new process vs. Flexibility under old process
 - Options either preserved flexibility and took too long to enter into the new process or cut over to the new process quickly potentially at the expense of existing projects
 - Balanced options between new process and transition timing still could endanger existing projects
 - PJM's Option #4 potentially not strict enough in moving projects towards the new cycle-based approach leaving the bulk of projects under the existing cost allocation rules continuing backlog delays

- The effective date of the transition is October 1, 2022 based on the current work plan
- PJM expects to complete queues through the end of AD2 under the existing process by the transition date. Projects will be worked under the current process until the effective date of the transition (“business as usual”).
- After the transition date, based on historical throughput and recent re-prioritization, PJM expects to be able to complete approximately 300 projects per year that remain in the existing process. Complete indicates entering into a final agreement or withdrawal.
- Projects that have received a final ISA/WMPA for execution or have a signed final agreement will not be subject to the transition
 - Executed Interim ISAs do not fall into the above category

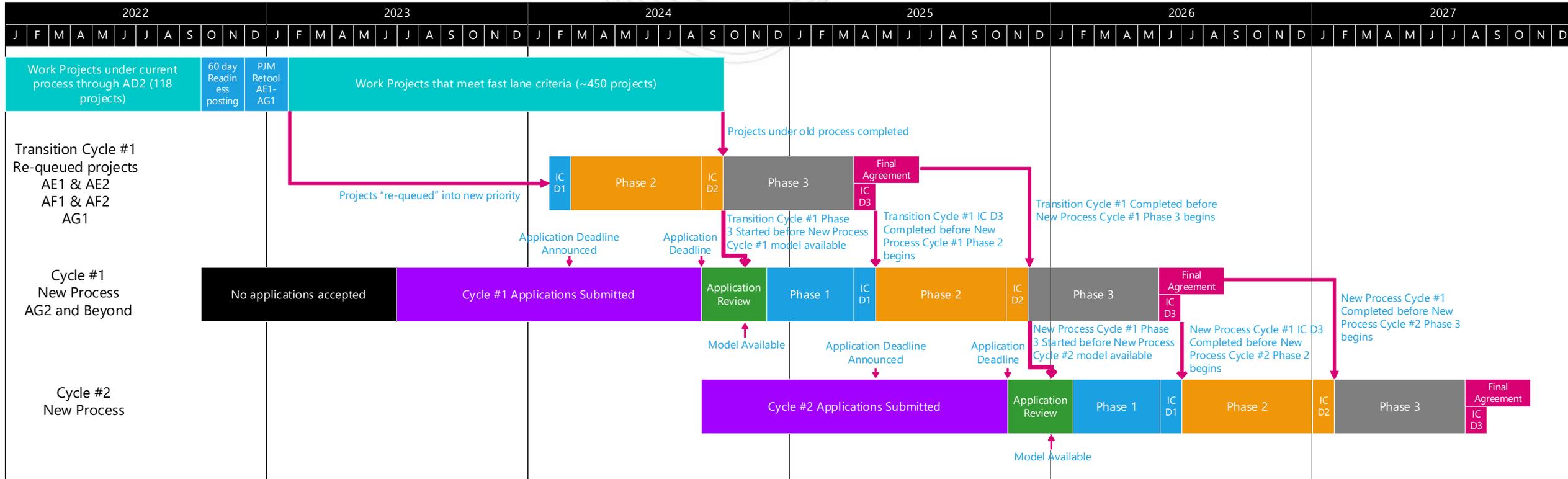
- PJM will limit the amount of projects that can remain under the existing cost allocation structure by developing a fast lane.
 - As of the transition date in the filing, all AE1-AG1 projects will have 60 days to post \$4K / MW as a readiness deposit and demonstrate the site control again for their generation facility for one year. Deposit is not at-risk.
 - Projects that have met this requirement will be retooled to determine shared network upgrade impacts
 - Network upgrade impacts includes the project meeting any cost allocation thresholds for shared network upgrades or a project being the first to cause the need for a network upgrade
 - Projects that have approved baselines and/or supplemental projects that obviate the need for a network upgrade will not be counted as a network upgrade impact but as contingent facilities
 - Affected system studies will not be evaluated during this retool

- Projects that are the first to cause a network upgrade or have cost allocation eligibility to a network upgrade for load flow and short circuit violations that are less than or equal to \$5 million ONLY will be allowed to enter the fast lane :
 - Facilities needed to interconnect the project will not be considered
 - PJM estimates approximately 450 projects will meet this criteria
 - No additional readiness requirements for fast lane projects
 - If stability analysis or a sag study is completed during the fast lane and it is determined that a project has a network upgrade > \$5 million, it will be removed from the fast lane and shifted to Transition Cycle #1
 - If it is determined, during the Facilities study, that the scope of the project has changed such that the estimate of the upgrade is now > \$5 million, the project will be removed from the fast lane and shifted to Transition Cycle #1
- Projects that enter the fast lane will have their Facilities Study completed and their ISA/ICSA tendered under the existing cost allocation rules.

- Why use less than \$5 million?
 - PJM's current tariff has different treatment for upgrades that are \$5 million or less
 - No inter-queue cost allocation with only the driver project and those who contribute in the same queue being eligible.
 - This amount should cover the bulk of substation and terminal equipment upgrades and, as a result, shorten durations for Facilities study work
 - PJM can use existing cost estimates from on-going Facilities studies and retooled analysis to determine eligibility without having to reassess all project's detailed cost allocation

- Projects that have a cost allocation eligibility for a shared network upgrade greater than \$5 million will be processed in Transition Cycle #1.
 - Remaining projects re-queued into a single transition cycle to speed up the transition to the new process
 - Transition Cycle #1 will start within one year of the transition while the fast lane project are ongoing. Phase #3 of Transition Cycle #1 will not begin until all fast lane projects are completed.
 - Retooled results and the new case will be provided in advance of IC Decision #1.
 - Rules applied will be consistent with the new process including readiness requirements such as deposits and site control
 - RD2 will be required by the end of IC Decision #1 and the original \$4K / MW provided at the initial 60 day period will be at risk

- All projects that have not been studied (AG2 and beyond) will be maintained and asked to submit changes to their application under the new process
 - Allows PJM to reduce the time to start accepting new applications to only 8 months
 - These projects would likely have to submit significant changes from their applications to PJM as a result of the delay
 - Projects submitted that claimed deactivating CIRs will be preserved by maintaining their queue project



- Advantages
 - Consolidates the transition into two distinct parts – fast lane and a single transition cycle
 - Fast lane bound by projects that can proceed upon completion of Facilities study which limits those under the serial cost allocation rules
 - Preserves the ability for backlogged projects who would have received an ISA under the existing process if not for queue delays
 - Reduces the time that the queue is closed for the transition and gets to the new process the quickest of all previously proposed PJM options.
 - Move projects with the least amount of network upgrades forward to an ISA to begin construction
 - Minimizes construction on the transmission system from a shared network upgrade viewpoint
 - Allows projects that could be used to meet state RPS goals to move quickly
- Disadvantages
 - Some projects may be pushed to Transition Cycle #1 due to small allocations to greater than \$5 million network upgrades
 - Longer fast lane transition process
 - Transition Cycle #1 will have a mix of projects from AE1-AG1 which may disadvantage some projects

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Appendix

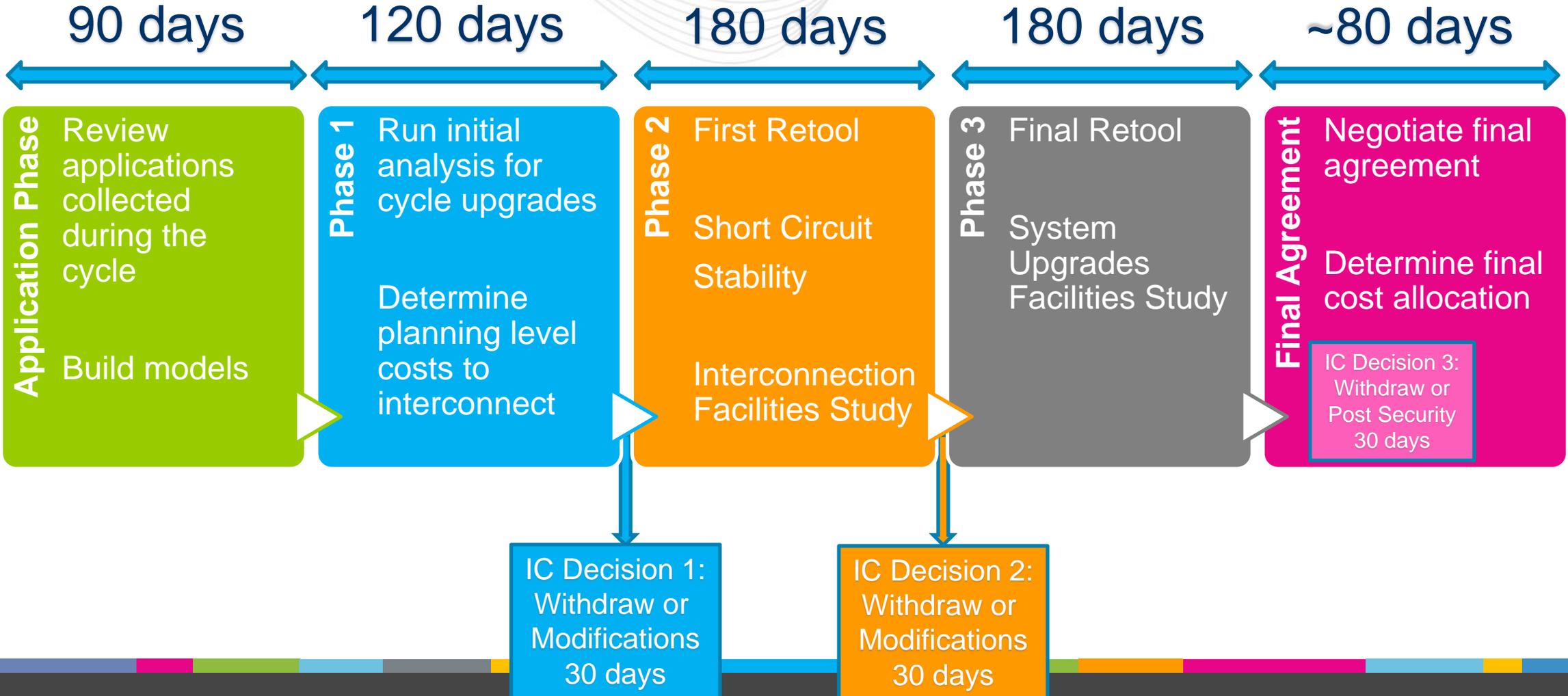
Interconnection Reform Task Force PJM Solution Proposal Framework

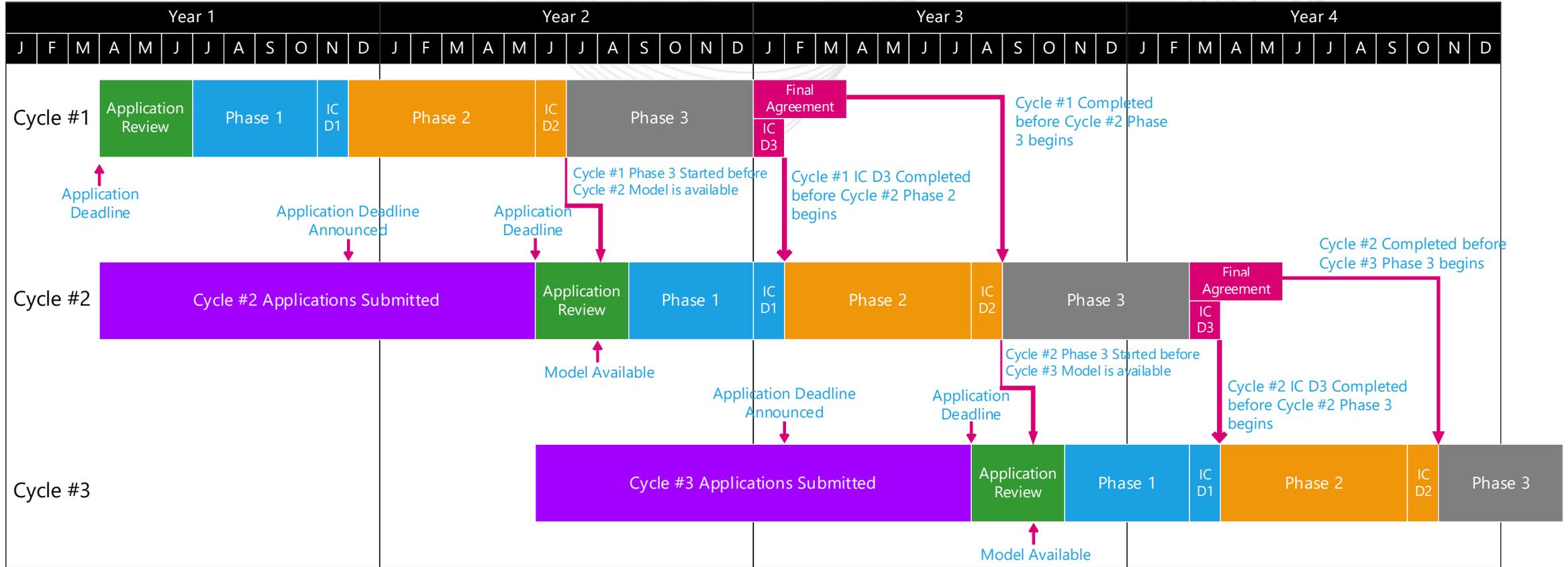
- Framework was created by PJM staff and management over several sessions
- The framework borrows heavily from interconnection processes in other RTOs
- Full solution details in the PJM Solution proposal matrix.

- Ideal timing not to exceed 2 years
- Cost and study construct should be cluster/cycle based and convert from first in/first out processing to first ready/first out processing
 - Readiness demonstrated by site control and financial milestones
- Subsequent cycle management should be assessed based on completion of a certain point in the prior cycle to minimize backlog
- Provide customers with more actionable information, earlier in the process
- Attempt to merge all other application types into new process
- State jurisdictional projects should have appropriate milestones to enter into an interconnection agreement from the Transmission Owner / Distribution Provider prior to receiving a Wholesale Market Participation Agreement

- Remove incremental financial rights for generators for simplification and due to removal of first-to-cause construct. Add a parallel process for generators seeking to receive these rights
- Remove other generation interconnection request forms (Attachments Y & BB) for simplification
- Remove or reduce scope of pre-application process
- Make project changes predictable from a process viewpoint and automatic to provide certainty to customers
- Allow off-ramps for generators proceeding through the process at various decision points
- Remove Optional Interconnection Study process

Total time per cycle – 710 days





Subsequent Cycle Start

- Application deadline of the subsequent cycle will be announced 180 days in advance at the conclusion of Phase 1 - IC D1 of the most recent cycle.
- Only completed applications received by the Application Deadline will be considered for the upcoming Cycle.
- Applications will only be reviewed during the Application Review period.
- Phase 1 of a subsequent cycle will only start after Phase 3 of the previous cycle has started AND all Application Review period activities have been completed AND the model have been made available for a 30 day review. Phase 2 of a subsequent cycle will only start after IC D3 have concluded. Phase 3 of a subsequent cycle will only start after the prior cycle has concluded.

- Single closing period for kicking off a cycle
- Allow a defined window to review all active applications from the open cycle
 - Do not review applications “mid-stream”
- Single application agreement with a unified study deposit and milestone payments
 - Typical data required + dynamic data up front
 - Shared facilities agreement required if connecting behind another POI
- Site control for generating site required and will be revisited throughout the process
- Single Point of Interconnection only
- Study Deposit (see table) + Readiness payment (\$4,000 / MW)
- Load Flow study model provided at least 30 days prior to the start of Phase 1

- Analysis Provided
 - Summer Peak load flow
 - Light load season load flow
 - This analysis will be the equivalent of an Impact study analysis at full commercial probability and DC & AC
- Interconnection Facilities
 - Scope, cost, schedule – planning desk-side estimate
- System Upgrades
 - Scope, cost, schedule – planning desk-side estimate
 - Cost allocation
- Results provided as a single cycle format (e.g. spreadsheet)

- Changes permitted:
 - Reduce the output of the request (both MFO & CIR)
 - Up to 100% of requested MFO and/or CIR value
 - Point of Interconnection finalized
 - Location along transmission line or
 - Substation breaker position
 - Equipment changes
 - Withdraw project
- Customer Requirements:
 - Decide whether direct connection network upgrades will be subject to Option to Build
 - Provide 100% generation facility site control again
 - Provide 50% of site control for customer interconnection facilities (gen-tie) to the Point of Interconnection & new interconnection switchyard (if applicable)
 - Provide evidence of air & water permits if applicable
 - State jurisdictional interconnections to provide evidence of entering the state's interconnection process (if applicable)
 - Readiness Payment #2 (10% of network upgrade costs)
- Off ramp for projects that do not require a Facilities Study and do not contribute to the need for network upgrades

- Analysis Provided
 - Retool load flow results
 - Short circuit study
 - Initial affected system study results (if needed)
 - PJM to notify developer of requirement to enter into an Affected System Study Agreement (if needed)
 - Stability analysis
- Interconnection Facilities
 - Transmission Owner to perform Facilities study
- System Upgrades
 - Scope, cost, schedule, & cost allocation

- Changes Permitted:
 - Reduce the output of the request (both MFO & CIR)
 - 10% of the amount studied for Phase 2
 - Equipment changes under permissible technology changes
 - Withdraw project
- Customer Requirements:
 - Readiness Payment #3 (20% of network upgrade costs)
 - Enter into Affected System Study Agreement if applicable
- Off-ramp for projects that only have interconnection facilities and do not contribute to the need for network upgrades. They can proceed directly to a final agreement

- Analysis Provided
 - Final retool of all Phase 2 analyses
 - Final affected system study (if needed)
- Interconnection Facilities
 - Target back-feed dates
- System Upgrades
 - Final cost allocation
 - Transmission Owner Facilities study
- Agreement Related
 - Draft ISA/CSA
 - Security calculation

- Changes Permitted:
 - Withdraw project

- Customer Requirements:
 - Post security for upgrade cost allocation and indicate the project will proceed to a final agreement.

 - Developer to provide 100% site control within 6 months of final agreement execution for the following:
 - generation site
 - interconnection switchyard
 - customer interconnection facilities to the POI

 - Provide evidence of necessary state, county, & local permits or a milestone will be created for the final agreement

- Negotiate final agreement details including milestones, construction schedule, site control review, and Transmission Owner input
- True-up final security as required for projects that may have withdrawn during IC Decision 3
- Perform any remaining retool necessary to ensure system upgrades are still needed
- No ability to suspend a project
 - Construction delays can be handled with milestone extensions for issues outside of the developer's control
 - Developers able to extend milestones for up to 12 months
- 15 business days to execute once tendered

- Generation Interconnection
 - Attachment N, Y, BB



- Transmission Interconnection
 - Attachment S



- Long Term Firm Transmission Service
 - Attachment PP



- Upgrade Request
 - Attachment EE



- Surplus Service Request
 - Attachment RR



Merge into new cycle process

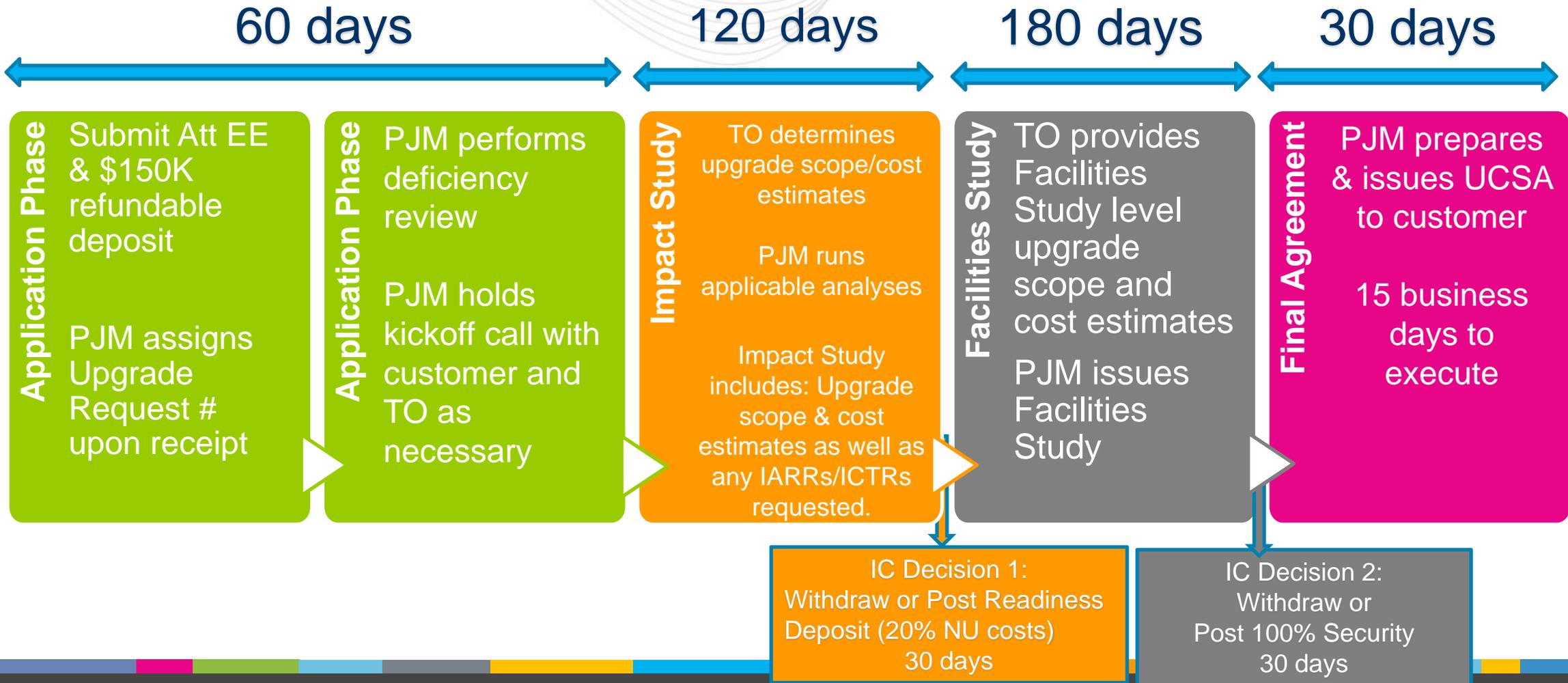
Parallel Process

Status Quo

Attachment EE

- Attachment EE - Upgrade Requests to upgrade existing PJM transmission facilities
 - Examples: Relieve congestion, request IARRs, request ICTRs
 - Presently come through the PJM New Services Queue
- Attachment EE – propose a separate process from the interconnection process with goal to complete processing of these requests in ~ 1 year
 - No Attachment EE window, these requests can be submitted at any time
 - The requested upgrade scope cannot be part of an already executed ISA or UCSA

Total time – ~15 months

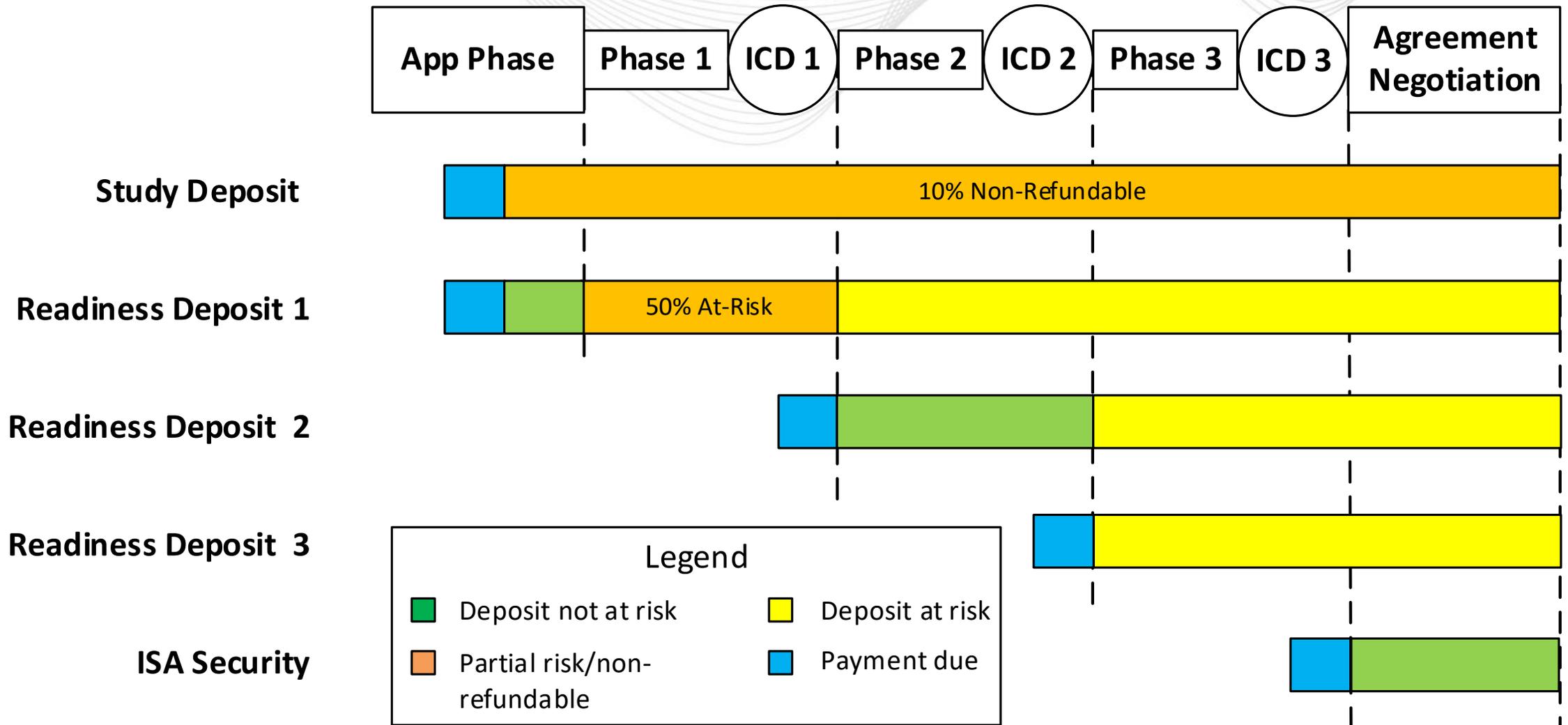


Study and Readiness Deposits Details

- Proposal adjustments and further clarifications
 - Change to the study deposit to have 10% be non-refundable
 - Separate treatment of Readiness Deposits and Security
 - Readiness Deposit refund timing
 - Proposed forfeited Readiness Deposit disposition

- Update to hold 10% of the study deposit as non-refundable
 - Mirrors the current deposit process
 - Refundable upon reaching commercial operation
 - To be used to fund restudies

Readiness and Study Deposit Timing Diagram



- Study Deposit
 - Covers the study costs
 - 10% non-refundable
 - Due one time at the beginning of the study process
- Readiness Deposit (RD)
 - Funds committed based upon project size and study results
 - Not used to fund studies
 - Refunds subject to study phase and adverse study results test
 - RDs determined at the time they are due; not to be refunded or reduced based upon later project reductions or cost allocation changes
 - Maximum of three RDs due at the project decision points

- Study Deposit

Project Size	Study Deposit
0 - 20MW	\$75,000
> 20 – 50MW	\$200,000
> 50 – 100MW	\$250,000
> 100 – 250MW	\$300,000
> 250 – 750MW	\$350,000
> 750MW	\$400,000

- Readiness Deposit Calculations

- RD1 = \$4,000 per MW
- RD2 = (10% of cost allocation towards required Network Upgrades) – RD1
- RD3 = (20% of cost allocation towards required Network Upgrades) – RD1 – RD2

- RD1 and Study Deposit proposed to be based upon the higher of requested Maximum Facility Output or Capacity Interconnection Rights
- RDs 2 and 3 can be zero, but not negative
 - At IC Decision Point 1, total RDs will be the greater of 10% of the cost allocation of required Network Upgrades or RD1
 - At IC Decision Point 2, total RDs will be the greater of 20% of the cost allocation of required Network Upgrades or RD2 or RD1

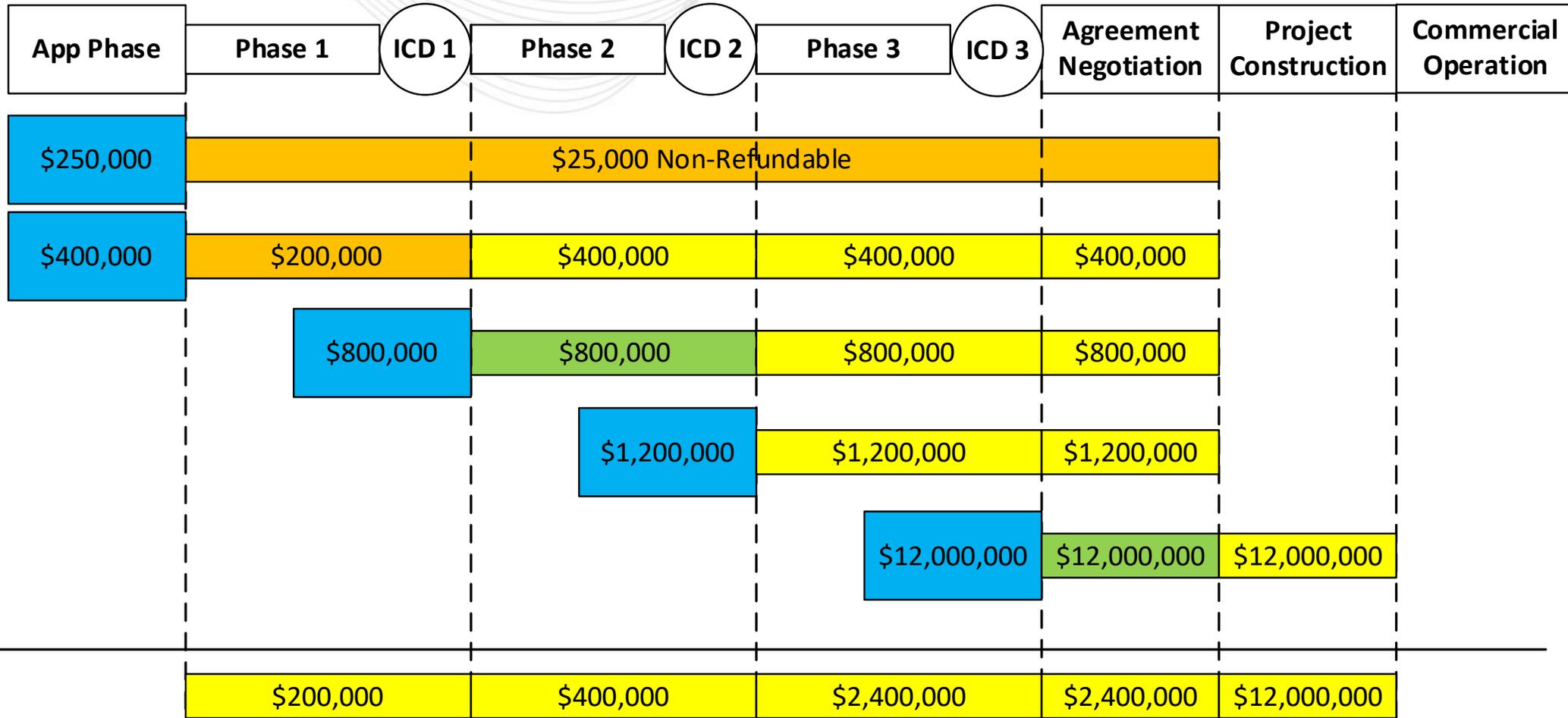
- At IC Decision 2
 - Increase in Network Upgrade costs allocated to the project of 25% or greater **and** more than \$10,000 per MW from Phase 1 study results
- At IC Decision 3
 - Increase in Network Upgrade costs allocated to the project of 35% or greater **and** more than \$25,000 per MW from Phase 2 study results

- Previously proposed that the Readiness Deposit would be rolled into Security at Agreement Negotiation
- Creates concerns by mixing funds held for different purposes
- Proposal updated to separate Security funds from Readiness Deposits
 - Security to be collected in full prior to entering the Agreement Negotiation phase
 - Readiness Deposits to be treated separately and available for refund once all IC Decision Point 3 site control requirements have been met and the final is agreement executed



Separate Treatment of Readiness Deposits and Security

Example
 100 MW Project
 \$12,000,000 Network
 Upgrade Costs

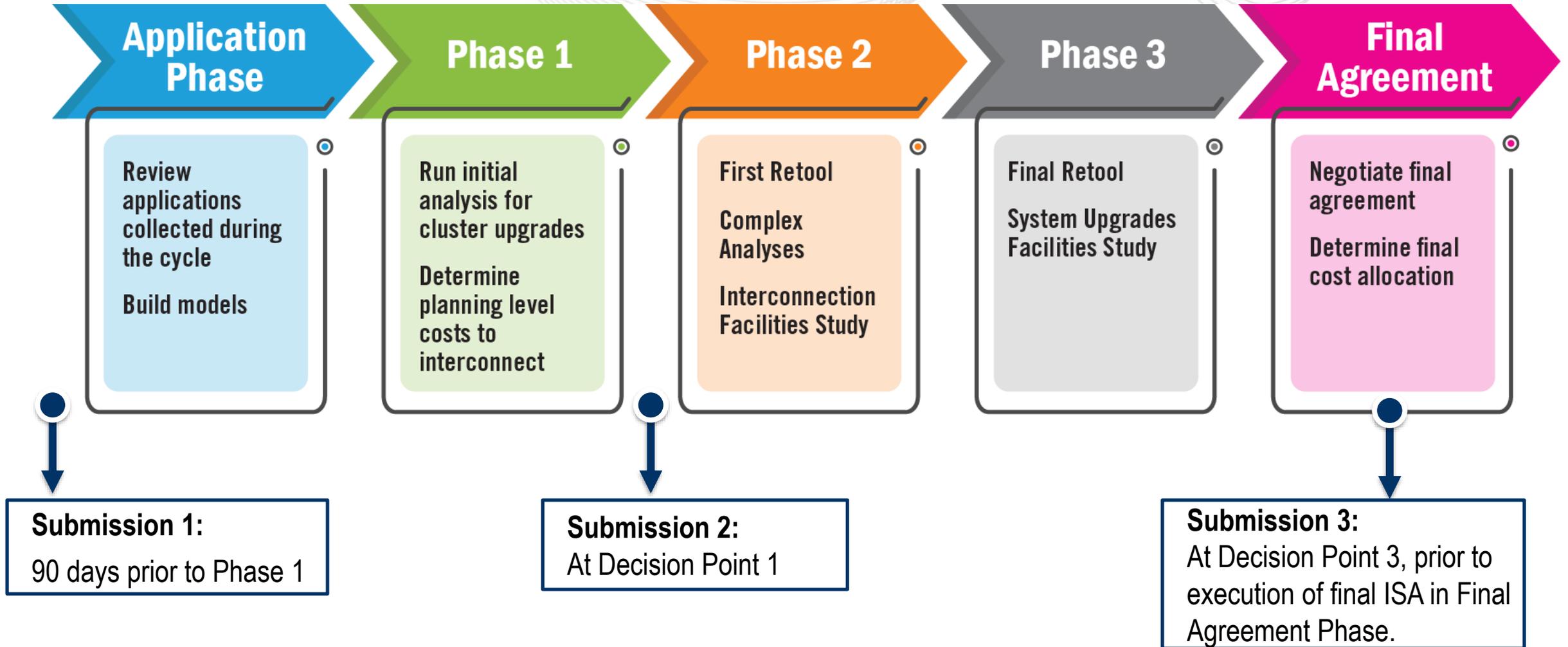


■ Deposit not at risk	■ Deposit at risk
■ Deposit partially at risk	■ Payment due

- Readiness Deposits from withdrawn projects (those that have not triggered the Adverse Study Results Test) will be pooled throughout the Cycle to be used to mitigate late-stage withdraws
- Late-stage withdraws defined as those that occur after Phase 3 Studies are complete
 - Withdraws at the end of the study process provide a small window for those remaining to adjust
 - Significant costs shifts may make remaining projects less viable

- Once all projects in the Cycle have made their decisions, PJM will retool incorporating all withdraws to determine what system Network Upgrades remain necessary
- Underfunded Network Upgrades will be identified
 - Forfeited RDs will be used to backfill
 - Possible that there will not be enough funds in the forfeited RD pool to mitigate all underfunding or there could be a surplus
 - Surplus forfeited RDs will be refunded to developers (pro-rata basis)
 - If after the retool no underfunded Network Upgrades are required, all forfeited RDs will be refunded

Site Control Details



Form of Evidence	
SUBMISSION #1 – APPLICATION PHASE	
Full Site Control:	Site Plan Showing:
<ul style="list-style-type: none"> 100% Generating Facility: deed/lease/option¹ 	<ul style="list-style-type: none"> Generating site Interconnection Facilities Interconnection Switchyard (if required)
SUBMISSION #2 – DECISION POINT 1	
Partial Site Control:	Site Plan Showing:
<ul style="list-style-type: none"> 100% Generating facility: deed/lease/option 50% Interconnection Facilities: deed/lease/option/ROW 50% Interconnection Switchyard: deed/lease/option 	<ul style="list-style-type: none"> Generating site Interconnection Facilities Interconnection Switchyard (if required)
SUBMISSION #3 – DECISION POINT 3	
Full Site Control:	Site Plan Showing:
<ul style="list-style-type: none"> 100% Generating facility: deed/lease/option 100% Interconnection Facilities: deed/lease/option/ROW 100% Interconnection Switchyard: deed/lease/option² (See 'NOTE' below) 	<ul style="list-style-type: none"> Generating site Interconnection Facilities Interconnection Switchyard (if required)

NOTE: If 100% of site control is **not obtained** by Decision Point 3, then Developer must show concrete evidence acceptable to PJM they are in negotiations to achieve 100% of all site control for a period of at least 3 years from the last day of Phase 3. PJM will add a condition precedent in the ISA tariff template requiring that within 180 days of the effective date of the ISA, 100% site control be acquired for at least 3 years from the last day of Phase 3. If 100% of site control is not obtained within 180 days of the effective date of the ISA, then the project will automatically be deemed terminated and will be withdrawn from the cycle.

¹ For Merchant Transmission, need site control for 100% Transmission Substation Facilities (e.g. for PAR, VFT) up front at the Application Phase. For transmission line facilities, full site control will be required at DP3. If not by DP3, then will need to be acquired within 180 days of the effective date of the ISA.

² Project Developer will need to be in compliance with Interconnection Transmission Owner’s ultimate ownership requirements for the Interconnection Switchyard.

Site Control Term	
SUBMISSION #1 – APPLICATION PHASE	
Full Site Control: <ul style="list-style-type: none"> 100% Generating facility: deed/lease/option 	Term Requirement: <ul style="list-style-type: none"> 1 Year from Application Deadline
SUBMISSION #2 – DECISION POINT 1	
Partial Site Control: <ul style="list-style-type: none"> 100% Generating facility: deed/lease/option 50% Interconnection Facilities: deed/lease/option/ROW 50% Interconnection Switchyard: deed/lease/option 	Term Requirement: <ul style="list-style-type: none"> Additional 1 Year from last day of Phase 1 1 Year from last day of Phase 1 1 Year from last day of Phase 1
SUBMISSION #3 – DECISION POINT 3	
Full Site Control³: <ul style="list-style-type: none"> 100% Generating facility: deed/lease/option 100% Interconnection Facilities: deed/lease/option/ROW 100% Interconnection Switchyard: deed/lease/option 	Term Requirement: <ul style="list-style-type: none"> Additional 3 Years from last day of Phase 3 Additional 3 Years from last day of Phase 3 Additional 3 Years from last day of Phase 3

³ **NOTE: If 100% of site control is not obtained by Decision Point 3**, then Developer must show concrete evidence acceptable to PJM they are in negotiations to achieve 100% of all site control for a period of at least 3 years from the last day of Phase 3. PJM will add a condition precedent in the ISA tariff template requiring that within 180 days of the effective date of the ISA, 100% site control be acquired for at least 3 years from the last day of Phase 3. If 100% of site control is not obtained within 180 days of the effective date of the ISA, then the project will automatically be deemed terminated and will be withdrawn from the cycle.



Officer/Authorized Representative Certifications

SUBMISSION #1 – APPLICATION PHASE			
Facility	Officer/Authorized Representative Certification ⁴	Landowner Attestation (or County Recording)	Duration of Control
Generating Facility	Yes	At PJM's discretion if deemed necessary.	Extends for at least a one year period past the first day of PJM Cycle X relative to Interconnection Request.
SUBMISSION #2 – DECISION POINT 1			
Facility	Officer/Authorized Representative Certification	Landowner Attestation (or County Recording)	Duration of Control
Generating facility, Interconnection Facilities & Interconnection Switchyard	Yes	At PJM's discretion if deemed necessary.	Extends at least one year past the last day of PJM Cycle X, Phase 1 relative to Interconnection Request.
SUBMISSION #3 – DECISION POINT 3			
Facility	Officer/Authorized Representative Certification	Landowner Attestation (or County Recording)	Duration of Control
Generating facility, Interconnection Facilities & Interconnection Switchyard	Yes	At PJM's discretion if deemed necessary.	Extends at least 3 years past the last day of PJM Cycle X, Phase 3 relative to Interconnection Request.

Note: Officer/Authorized Representative Certifications (*and Landowner Attestations if PJM deems necessary*) are **in addition to** site control!

⁴ Authorized Officer or Authorized Representative can sign.

Site Control	PJM Proposed Reform
Exclusivity	Exclusivity evidence required in deed/lease/option
Acreage requirements	<p>Solar: 5 Acres per MW Wind: 30 acres per MW Battery Storage 0.1 acres per MW Synchronous Generator: 10 acres per facility</p> <p>*PE Stamped Site Plan will be accepted</p>
Site Sharing	<ul style="list-style-type: none"> • Identification of other projects sharing site (same owner) • Proposed space utilization by all projects (same owner)
Officer/Authorized Representative Certifications	<p>Site control + Officer/Authorized Representative Certification + Landowner Attestation (or County Record) (if deemed necessary by PJM)</p>
Changes to site	<p>No significant changes permitted (By DP1 need to solidify POI)</p>