

ORR PJM Queue Reform Transition Proposal

ORR's Transition Proposals to PJM Queue Reform Task Force

*Building consensus among disparate interests by “**thinning out**” the serial backlog*

10/7/21



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 - Example of ‘Serial’ versus ‘Cluster’ cost allocation methodology
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Summary

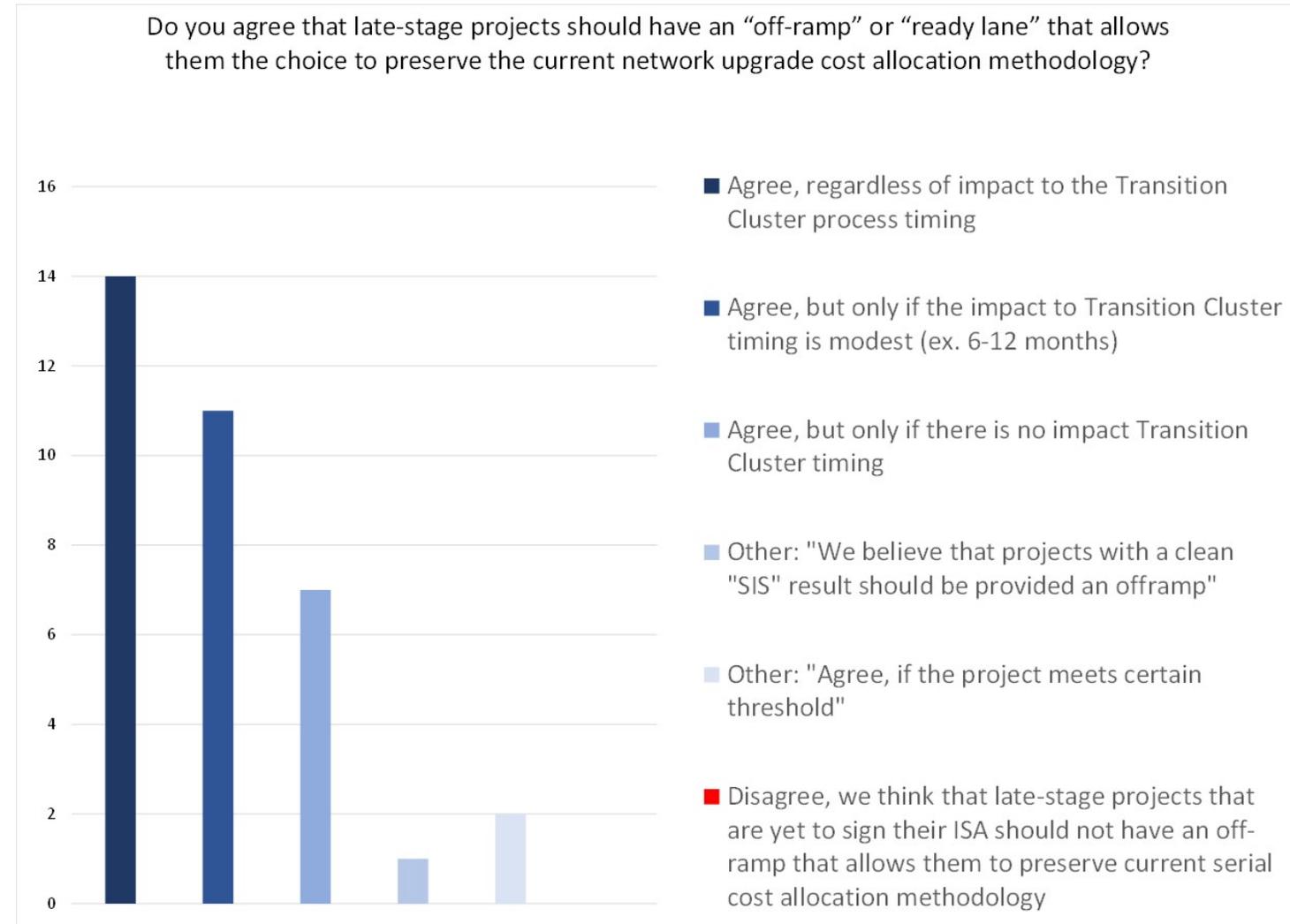
- Building consensus around a Transition mechanism will take continued good faith efforts
- To build consensus and attain FERC Approval, we believe that the solution must address three key interests:
 - Expediency
 - Technical Viability
 - Equity
- ORR's proposal focuses PJM, TOs, and ICs attention on the "highly certain" projects and reduces the loading for PJM and TOs on the more speculative projects
- ORR's proposal will also enable commercial operation of more renewable energy over the next 4 to 5 years by providing a ready-lane for late-stage projects now vs restudying them in a transitional cluster
- ORR's proposal, which is still a work in progress, attempts to represent the interests of the majority ICs with Active queue positions and bring us closer to consensus
- ORR recognizes that more work is needed and we believe the key question is:

How do we surgically enable late-stage "highly certain" Active projects in AG1 and earlier queues to have their ISA tendered prior to Transition and/or have a Transition mechanism that ensures the late-stage "highly certain" projects can be expeditiously processed under current cost allocation methodology before the one-time transition to Cluster processing?

PJM Queue Reform: How did we get here?

The “late-stage” project interests emerged during the 9/20 Stakeholder meeting with a **chorus of ICs** voicing support for the concept of a ready-lane for projects with SIS in-hand (ex. **17 companies** voiced support for the concept **vs. 4 companies** that voiced support for PJM’s proposal(s)).

Updated 10/1 polling shows unanimous support for a ready-lane for late-projects with varying views on the impact to Transition Timing. Full polling results in Appendix.



PJM Queue Reform and FERC Precedent

- Consistent with the IC interests shown in the previous chart, FERC's historic Transition Orders and Commission Determinations **expressly protect late-stage projects** from harm (ex. MISO ER17-156, PsColorado ER19-2774, CA-ISO ER08-960)
- “Late-stage” has been consistently defined by having **System Impact Study (SIS) in-hand** (or should have SIS in-hand) at time of FERC Order approval which lines up with AG1 and earlier queues...some argue that this should include AG2 queues as well
- ORR understands that FERC will likely defer to the RTOs Transition proposal, provided that the plan is **just, reasonable, and not unduly discriminatory** and workable
- ORR understands that FERC looks favorably on Transition proposals that have **broad consensus and minimal protests**, but scrutinizes proposals with significant protests
- Therefore, we should all strive for a proposal that builds **consensus** within IPRTF and balances the interests shown on the next slide

Path to FERC Approval: Balancing the Interests

In the interest of finding a Transition Plan that will lead to FERC approval, proposals must adequately address *three* questions:

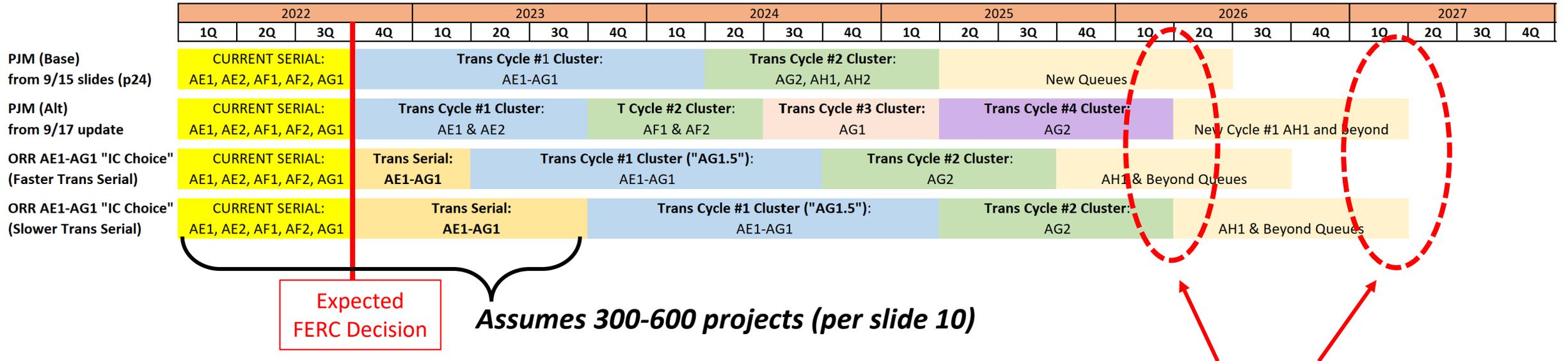


How do we fix the problem as **expeditiously** as possible?

How do we ensure that the solution is **technically feasible**?

How do we ensure that the solution is **not unduly discriminatory** and **not unjust to “late-stage”** project interests?

ORR's Proposed Transition Plan Timing



- ORR's proposal could resolve the AG1/AG2/AH1 cluster backlog **as quickly as PJM's 9/17 proposal**
- ORR's proposal would enable 'late-stage' AE1-AG1 projects to have a **ready lane** to have their ISA tendered under the current cost allocation methodology
- Gating Facts about ORR's proposal:
 - Deemed **technically feasible** by PJM Staff, administrative burdens under review
 - "Speculative" AE1-AG1 projects with uncertain upgrade costs **would choose** the Transitional Cluster Cycle #1 → **thin out** the backlog of remaining Serial queues to a volume that can be processed <12 months of Transition Date
 - **More projects executing ISAs through 2023** and thus **more renewables online by 2025/2026 vs. PJM's proposals**

Overview of ORR's Proposal: Guiding Principles

1. **Expediently** advance a solution that addresses the current PJM queue backlog
2. Arrive at a solution that allows projects in **AG1 and earlier** queue positions to preserve the current cost allocation methodology (i.e. [PJM Manual 14A](#) Sec B.3.1)
3. Maximum **consensus** among developers and IPPs requires a combination of:
 - a) A "**ready lane**" for late-stage projects to stay under existing rules
 - b) Give **choice** to AG1 or earlier queue positions
 - c) New **readiness financial criteria** that allows "clean" or "projects with certainty" to proceed in a ready-lane while incentivizing "encumbered" projects with upgrade costs to move to a transitional cluster.
4. ORR's proposal **balances the interest** between equity for late-stage projects and expediency of transitioning to cluster processing

ORR's Transition Plan: "AG1 and earlier IC Choice"

- Upon FERC Order approval, AG1 and earlier Active queue positions will have the one-time choice to remain under the existing serial processing but would need to post an at-risk **"Transitional Serial" Readiness Obligation ("TSRO")**
- The higher "Transitional Serial" Readiness Obligation would result in **culling the queue backlog** such that "clean" or "highly certain" projects would continue under the Transitional Serial processing and quickly have their ISAs tendered and securitized
- Active AG1 and earlier queues that are hesitant to post the TSRO (ex. due to uncertainty on upgrade costs) could instead opt to move to a "Cycle #1 Transitional Cluster" similar to PJM's proposed transition cluster(s) and post a reduced **"Transitional Cluster" Readiness Obligation ("TCRO")**
- That Cycle #1 Transitional Cluster would be processed under cluster cost allocation rules **after the serial processing** of the "clean" or "high certainty" AG1 and earlier Transitional Serial projects

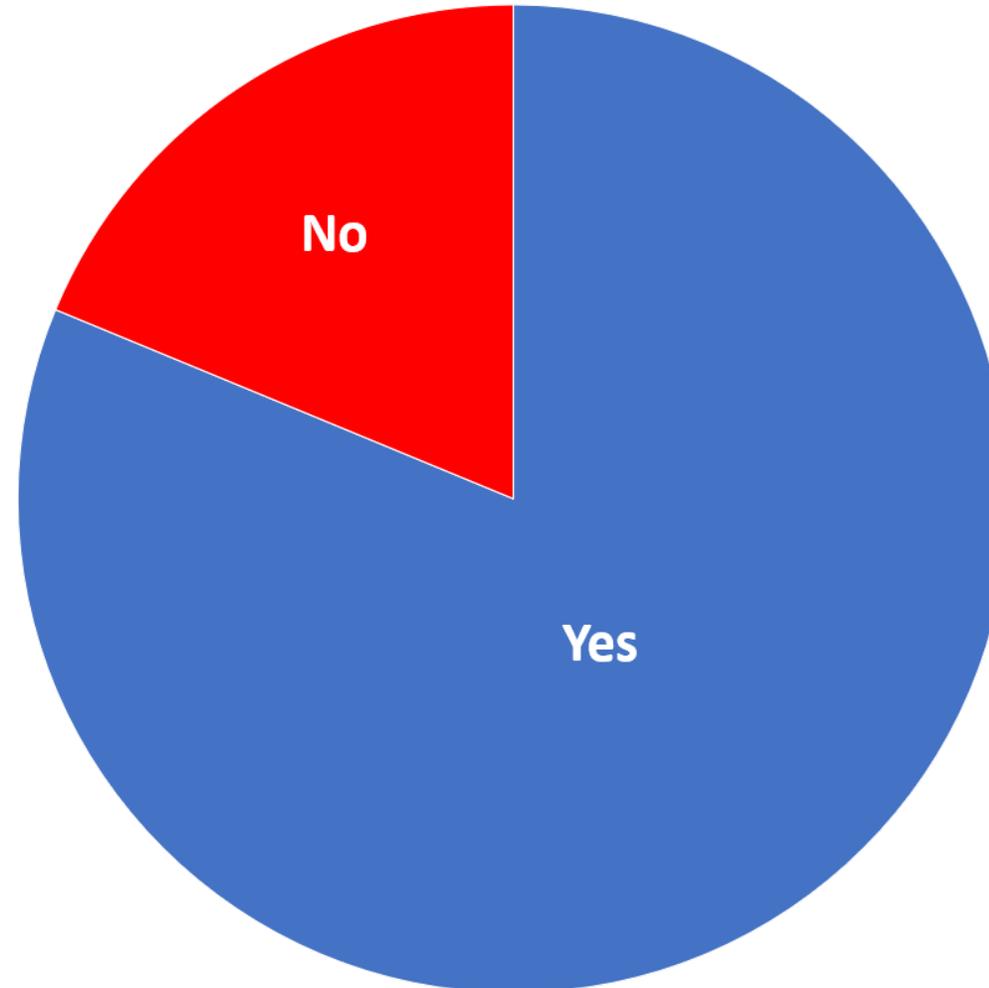
How does the Readiness Obligation impact Transition Timing?

- The key to ORR's proposal is to cull the serial queue such that a fraction of Active AG1 and earlier projects are processed serially (i.e. "highly certain" projects)
- 1,111 Active projects in AE1-AG1 and another 113 in AC1-AD2 for a total of **1,224** Active projects through AG1
- Assuming ~25-50% of these projects are "highly certain" and desire to stay under serial processing, that would mean **~300-600 projects** would need to be processed serially before the transition to Cluster processing
- Assuming FERC Order approval a year from now and PJM's stated processing capacity of ~300 projects/year, there would be no more than 300 projects left at FERC Order approval, representing **~6-12 months** of additional serial study before the Transitional Cluster study process would begin
 - This range is reflected in ORR's "***Faster Trans Serial***" vs "***Slower Trans Serial***" scenarios (driven by effectiveness of Readiness Obligation "culling" the queue)
 - This also aligns with the **timing of Facility Study Agreements for AG1** queue projects which have forecasted Facilities Study Reports and ISA tendered in Q1/Q2 2023

Do you believe that an appropriately structured "Readiness Obligation" as a condition to retaining the current serial cost allocation methodology at time of FERC Order Approval can effectively segregate late-stage projects that are highly likely to securitize their ISA vs. more speculative projects that may not ultimately securitize their ISA?

The vast majority of ICs would view an increased Readiness Obligation for late-stage projects to stay under serial processing (TSRO) as being more equitable versus being forced into the cluster-based processing as PJM proposed on 9/20.

Additionally, 84% of renewable IC poll respondents believe that an appropriately structured Readiness Obligation can effectively "cull" the backlog.



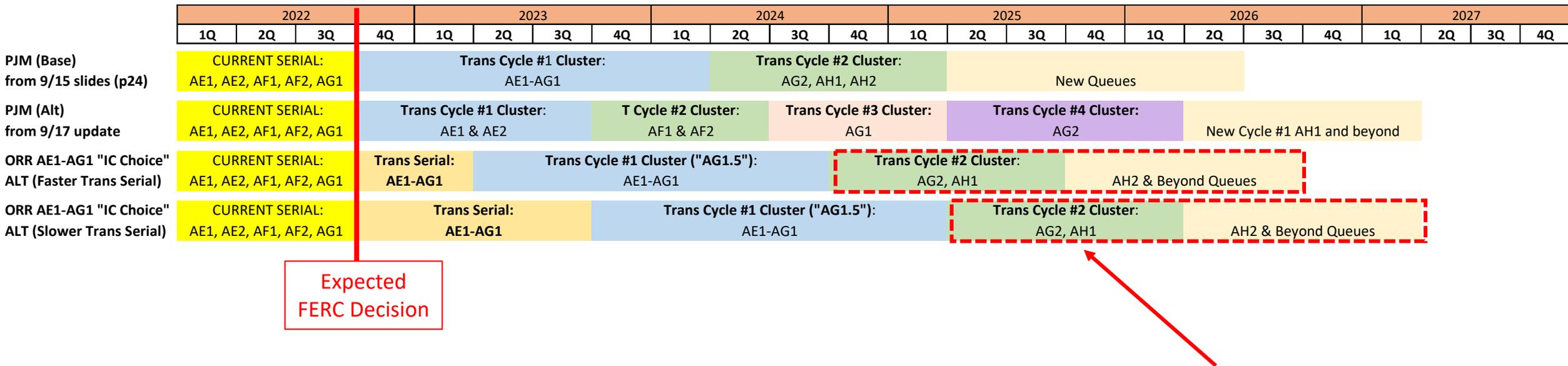
Importance of Transitional Serial Readiness Obligations

- The TSRO can be structured in a manner to successfully **cull the queue backlog** so that late-stage projects that are highly likely to securitize their ISAs are separated from those that are less certain (ex. due to unknown NU cost allocation, etc.)
- To accomplish this outcome, ORR proposes a TSRO with a combined fixed \$/MW amount and a variable amount based upon Network Upgrades (“NU”) in the most recent SIS in order to capture a range of scenarios:
 1. \$4k/MW fixed portion, plus
 2. The **greater of** a project’s current NU cost allocation **OR** [50%] of total system upgrades to which the project currently contributes in the current SIS Report on the FERC Order Approval date
- Conversely, for the Transitional Cluster Readiness Obligation (“TCRO”) ORR proposes \$4k/MW (with no adder for system upgrades, since these projects will be restudied in the transition cluster)
- Examples:
 - Ex. 1 - A 100 MW project that has \$0 NUs: **a \$400k TSRO or \$400k TCRO**
 - Ex. 2 – A 100 MW project that has 100% cost allocation to \$500k upgrade: **\$900k TSRO or \$400k TCRO**
 - Ex. 3 - A 100 MW project that has 20% cost allocation to a \$10m upgrade: **\$5.4m TSRO or \$400k TCRO**

Importance of Transitional Readiness Obligations

- Under ORR's proposal, both TSRO and TCRO securities would be **applied to the ISA Security and forfeited if the ISA is not signed** and securitized when tendered
- Similar to PJM's existing ISA security provisions, any **forfeited** Readiness Obligations would be **used to fund the system upgrades** for which they were posted.
- The specific details around the application of the Readiness Obligation securities to the ISA security obligation, and subsequent funding of the system upgrades, is an **open item** to build consensus around; FERC approved a **similar concept with MISO's "Initial Payment"** under the GIA.
 - If a particular NU is fully funded as a result of at-risk TSRO postings, **should the TO proceed with the system upgrade work?**
- ORR is **open to alternative approaches** to structuring the Readiness Obligation provided we achieve the goal of culling the queue to expedite processing of highly certain (i.e. "clean") projects vs. those that have more uncertainty

ORR's Alternate Transition Proposal



- ORR's **Alternate Transition Proposal** is identical to the primary proposal, except that **Trans Cycle #2 includes the AH1 queue** as well as the AG2 queue, while AH2 queues are studied in a new queue along with new queue applications.
- This proposal represents **earlier processing of AH1** vs. ORR's Primary or PJM's Alt proposals.
- This proposal achieves the **same timing as ORR's Primary Proposal** while providing earlier processing of AH1 queued projects.

Other Key Opportunities to Explore

- In the very near future, PJM could file a request to **waive OATT provisions** to allow AG1 and earlier projects with SIS in hand **to have ISAs tendered** prior to FERC Transition Order Approval date.
 - ISA would be tendered **in advance of Facilities Study report** issuance and would be securitized with **at-risk security** based on values in SIS report
 - **IC would take risk** on Stability Study and Facilities Study costs
 - This would enable “clean” ICs to **lock in their cost allocations** and reduce the handover of mature queues that would have to be processed after FERC approval.
- May add unintended **complexity** with PJM and TOs by locking in ISA milestones without the completion of requisite studies
- **Add more PJM staff** and **delay** the processing of AG2, AH1, and AH2 studies until the backlog through AG1 is cleared

Conclusion

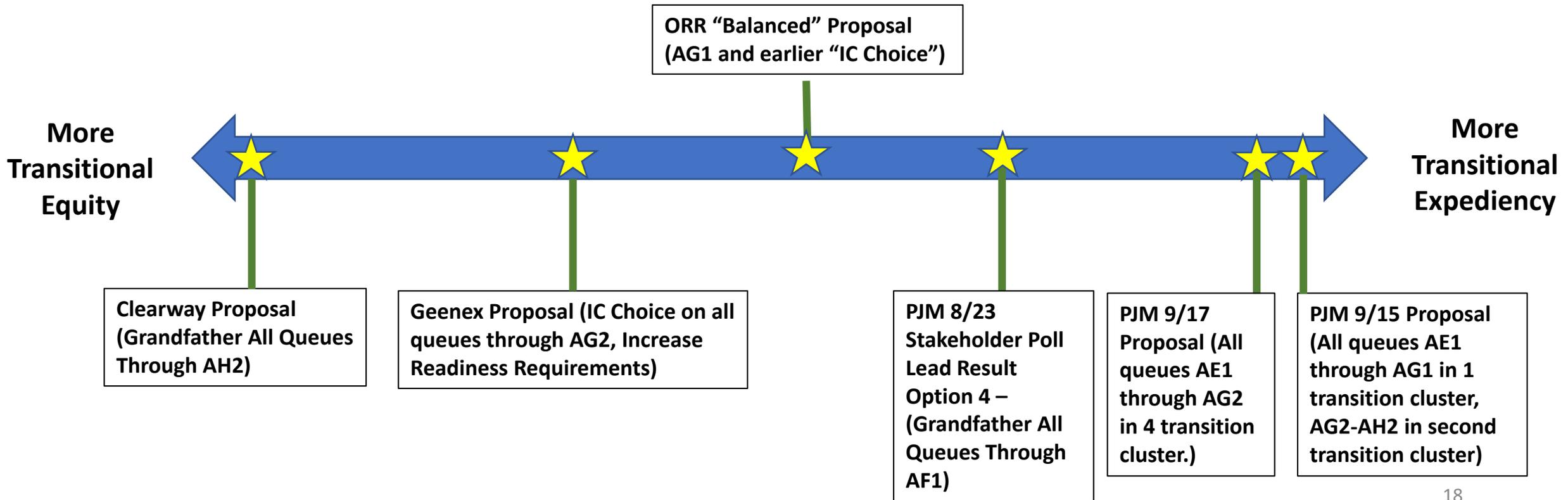
- Building consensus around a Transition mechanism will take continued good faith efforts
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 - Expediency
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- ORR's proposal focuses PJM, TOs, and ICs attention on the "highly certain" projects and reduces the loading for PJM and TOs on the more speculative projects.
- ORR's proposal will also enable commercial operation of more renewable energy over the next 4 to 5 years by providing a ready-lane for late-stage projects now vs restudying them in a transitional cluster
- ORR's proposal, which is still a work in progress, attempts to represent the interests of the majority ICs with Active queue positions and bring us closer to consensus
- ORR recognizes that more work is needed and we believe the key question is:

How do we surgically enable late-stage "highly certain" Active projects in AG1 and earlier queues to have their ISA tendered prior to Transition and/or have a Transition mechanism that ensures the late-stage "highly certain" projects can be expeditiously processed under current cost allocation methodology before the one-time transition to Cluster processing?

APPENDIX

- Comparison of Proposals
- 10/1 Industry Poll #2 Results
- PJM OATT Cost Allocation Background
- Network Upgrade Cost Allocation Example
 - Serial – Traditional Design
 - Cluster – Future Design
- FERC Protest = Delay of Transition
- 9/20 Industry Poll #1 Results
- Critique of PJM 8/23 Poll

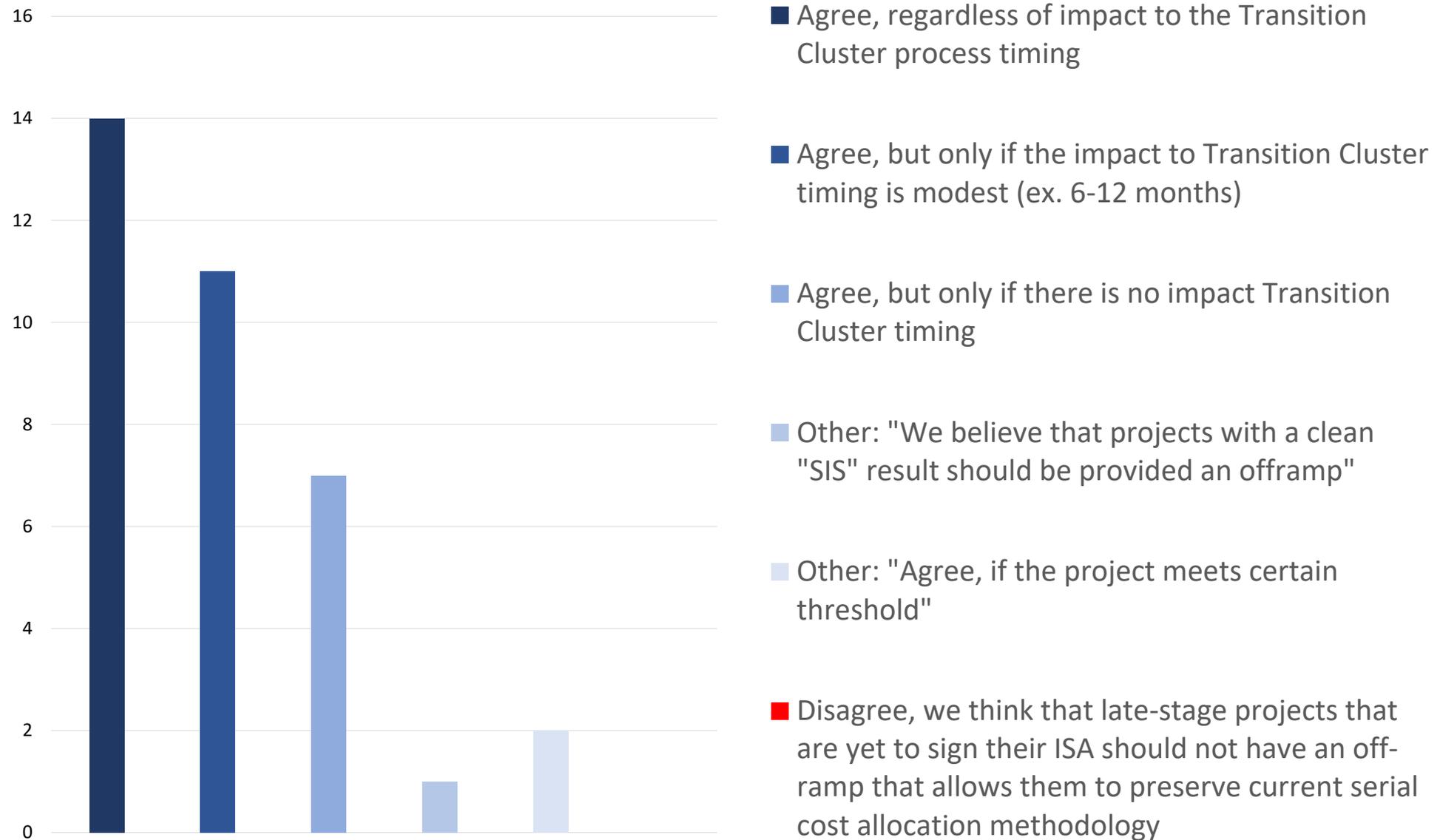
Queue Reform Transition Proposals To Date



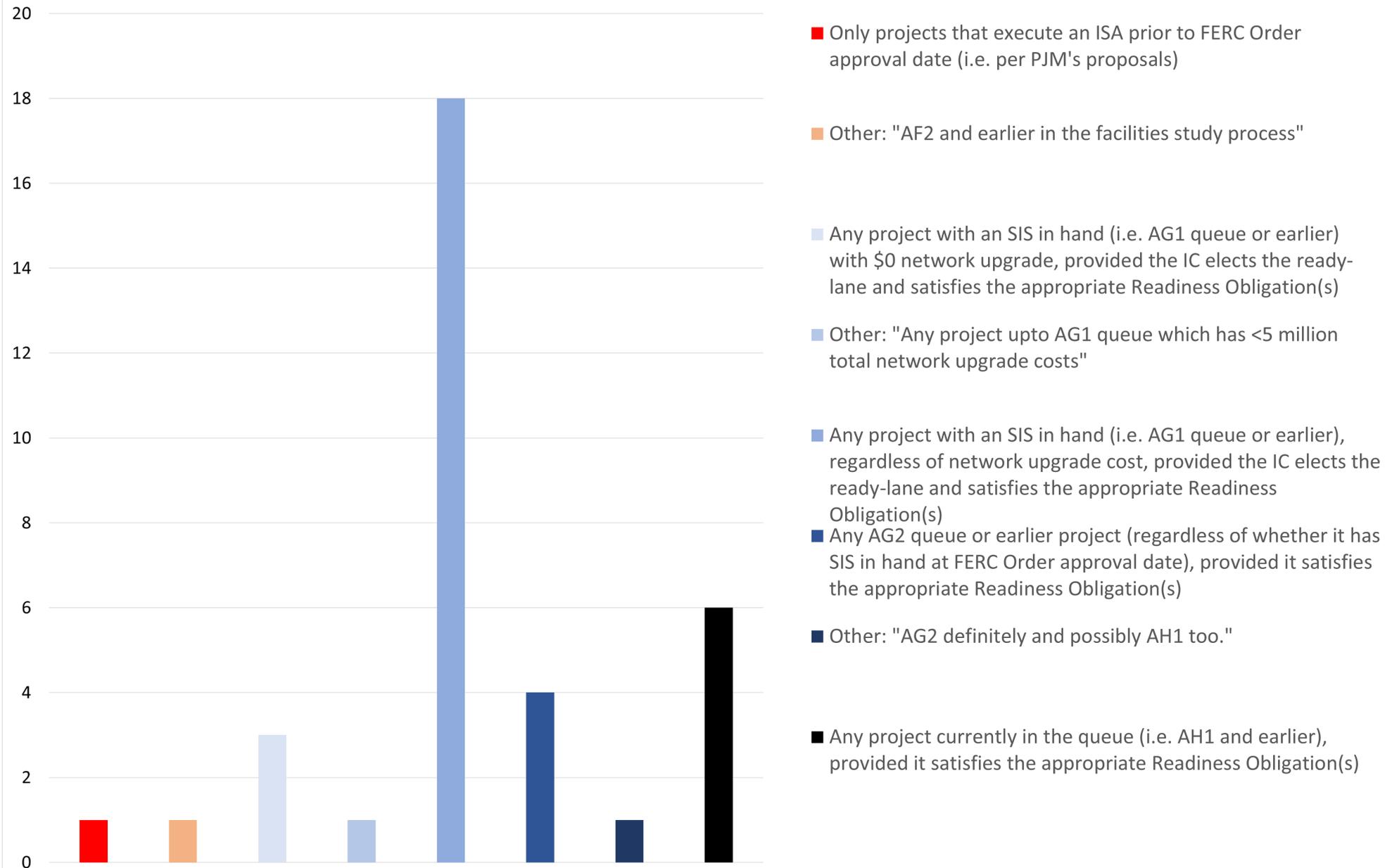
Renewable Coalition Poll #2 Details

- Following the 9/20 Stakeholder meeting, ORR coordinate with a number of renewable energy coalitions including SEIA, MAREC, CHESSA, and USSEC OH and **heard feedback from over 40 renewable companies.**
- A **poll** was released from 9/28 through 10/1 to members of these groups active in PJM and the results were assembled on 10/2.
- **36 companies participated** in the poll, ~1/3rd of which had participated in PJM's 8/23 stakeholder poll
- The polling results show **unanimous support for a 'ready-lane' for late-stage projects** to lock in the current serial cost-allocation methodology
 - With varying perspectives on any potential impact on Transition Timing
- Our hope is that the polling data will enable PJM and Stakeholders to continue working constructively towards a **balanced solution**

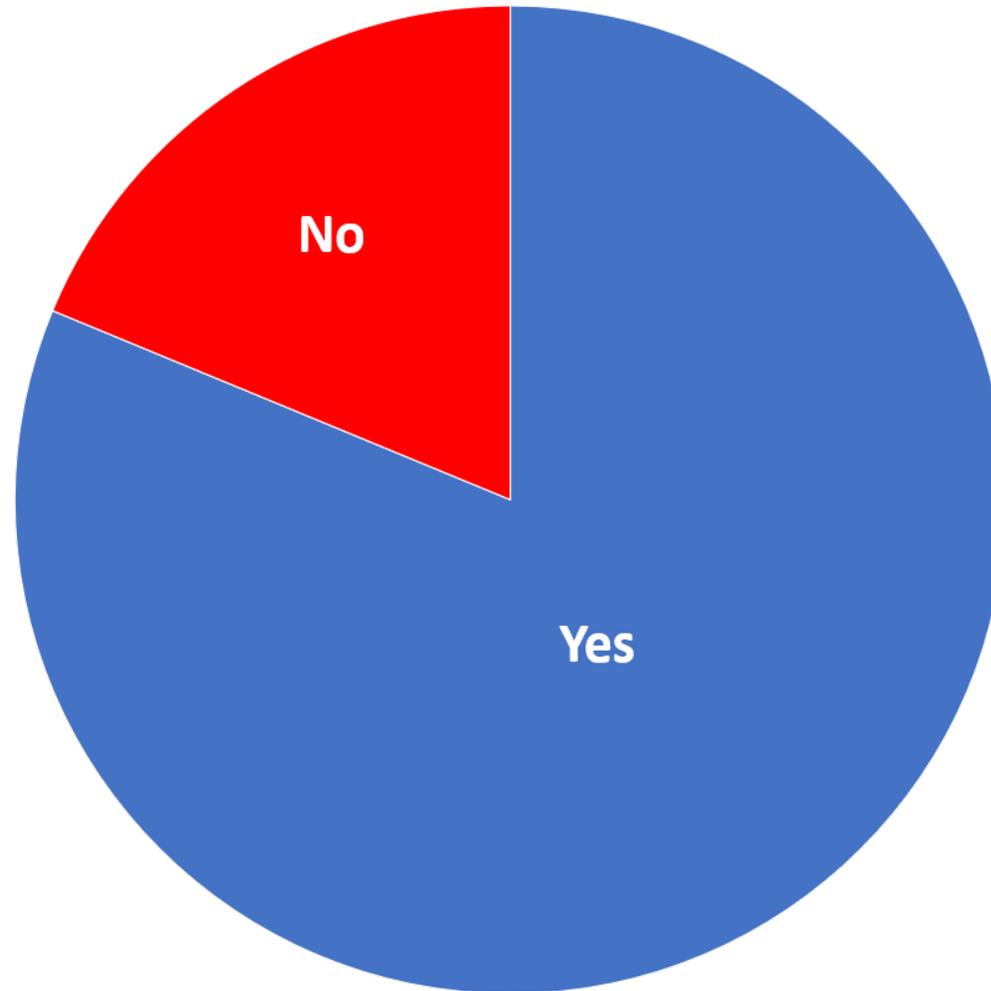
Do you agree that late-stage projects should have an “off-ramp” or “ready lane” that allows them the choice to preserve the current network upgrade cost allocation methodology?



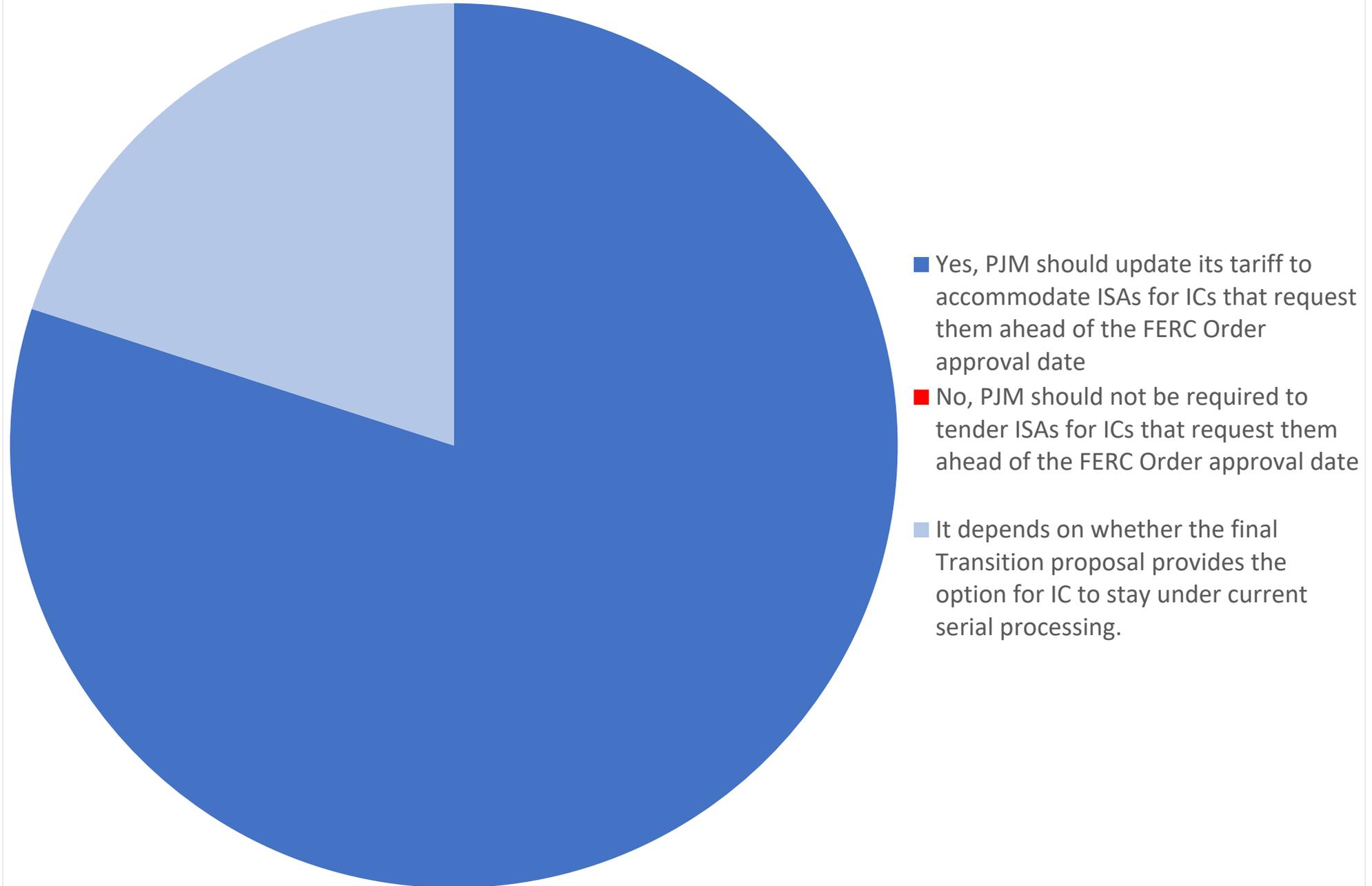
With regard to an off-ramp or ready lane to preserve the current serial cost allocation methodology, which projects should be eligible?



Do you believe that an appropriately structured "Readiness Obligation" as a condition to retaining the current serial cost allocation methodology at time of FERC Order Approval can effectively segregate late-stage projects that are highly likely to securitize their ISA vs. more speculative projects that may not ultimately securitize their ISA?



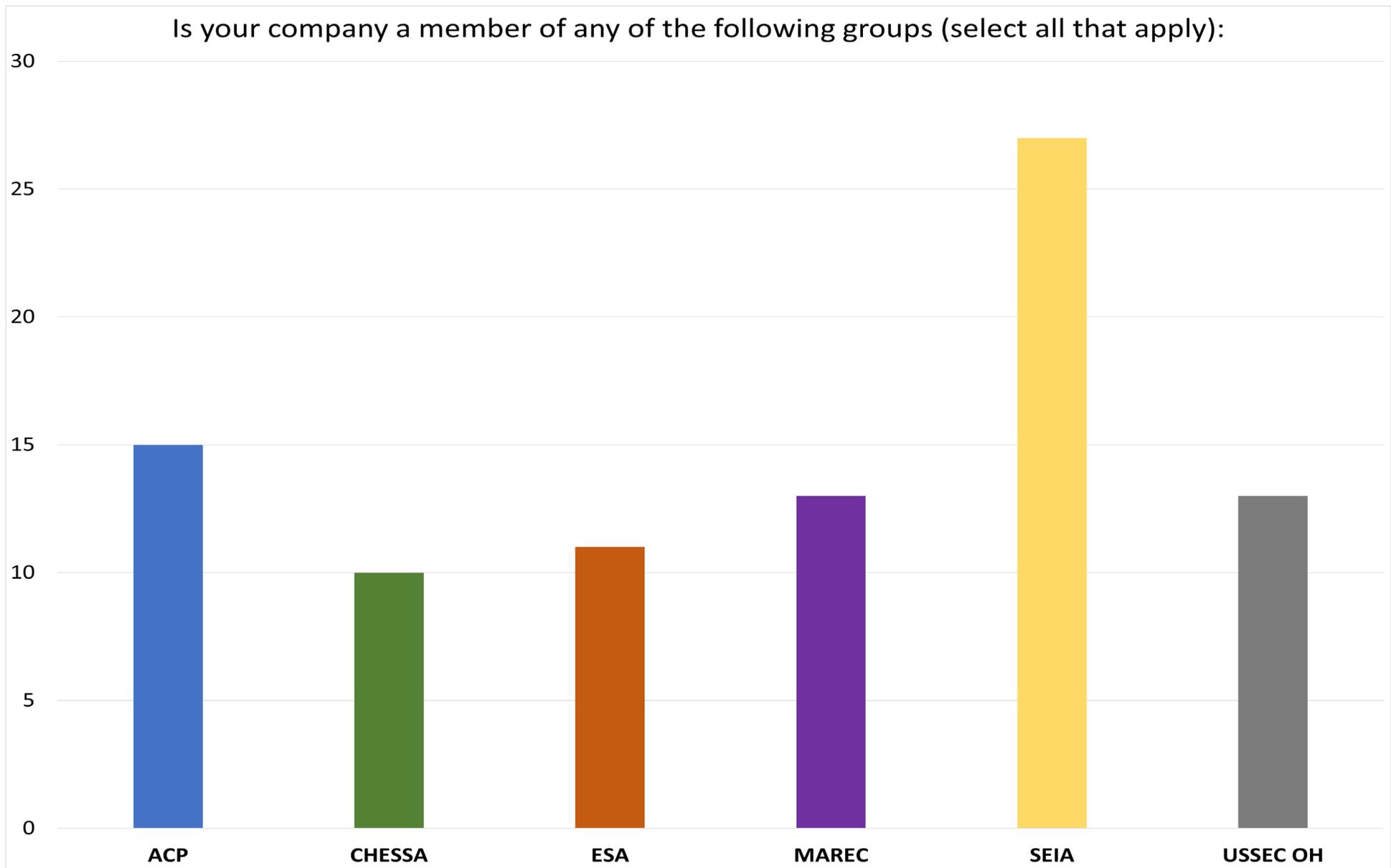
Between now and FERC Transition Order Approval, do you believe PJM should be required to tender ISAs for ICs that request an ISA?



Did your company participate in the PJM Task Force's 8/23 stakeholder poll?



Is your company a member of any of the following groups (select all that apply):



ACP (The American Clean Power Association) - CHESSA (Chesapeake Solar and Storage Association) - ESA (Energy Storage Association) - MAREC (Mid-Atlantic Renewable Energy Coalition) - SEIA (Solar Energy Industry Association) - USSEC OH (Utility Scale Solar Energy Coalition of Ohio)

Poll #2 Responder Comments

- The below slides capture verbatim comments provided by poll respondents to the 2nd renewable coalition poll from October 1, 2021.
- Note: Some comments reflected confusion around PJM's inability tender early ISAs that lock in the serial cost allocation contribution before all studies are complete (PJM has repeatedly confirmed that they cannot)

Importance of Expeditious Processing Question

- Yes, as long as the expeditious processing avoids economic harm to late-stage projects with known upgrade costs (those with a SIS in-hand or expecting to have a SIS available shortly) and provides some choice to these ICs over whether to remain under the current serial cost allocation rules.
- It is important to process the backlog, however allowing a mid-course rule change would invalidate the work interconnection customers have been doing for years, all while adhering to the rules. PJM must at least give interconnection customers the option to continue under the existing rules. If the shoe were on the other foot and interconnection customers were not able to submit requests under the current rules because of staffing shortages, I doubt there would be much in the way of exceptions.
- Clearing out the PJM backlog is a priority but not at the expense of mature projects that have been investing based on existing rules for years
- PJM needs to focus on the Facility Study backlog
- Yes, we want the backlog to be cleared expeditiously but also making sure the older queue projects have some grandfathered rights.

Importance of Expeditious Processing

Question

- We welcome PJM transitioning to a queue processing methodology that establishes high bar for entry to ensure quality projects occupy the queue and allow PJM to efficiently process the queue - both the existing queue and future queue.
- It is important but keeping too many projects status quo is not going to do that. There will be some winners and losers. If a project has a good SIS in hand they can ask for an IA now, if not doing that they they have good results but not willing to take any risk.

Off-ramp for Late-Stage Projects Question

- Difficult without a real definition of late-stage project. also, the standards around the off ramp are needing development
- ICs that entered earlier study cycles typically have much larger dollars invested in holding and maturing their projects than ICs that have only recently entered the queue. These earlier cycle projects (pre-AH1) should be allowed the opportunity to complete the serial study process. We understand that additional security may be necessary to signal to the stakeholder community that such ICs believe their projects are viable. However, ICs that post such additional security should also be protected, in the form of Penalty Free Withdrawal provisions, that protect the ICs in the event of substantial cost increases that are no fault of their own (e.g. the identification of multi-mile OPGW installation during the FacS that increases total cost by more than 20%).
- Interconnection have made significant financial investments and long range strategy and planning decisions based on the current rules. They have followed the rules and are now going to be penalized because of staffing issues at PJM.
- It's most equitable to let all projects that have been developed under existing rules get through the process under those rules. But at a minimum those projects advanced enough to have received SIS must be allowed the opportunity to continue under existing rules.

Off-ramp for Late-Stage Projects Question

- To some extent, clean interconnects should be able to move forward without regards to the transition cluster, but from a practical standpoint, there are many ICs that will care and in order to get a consensus of the group, there needs to be some consideration of timing of moving all queue positions forward, which is why we are all here trying to figure out the best solution for interconnection reform.
- We believe an option to sign a "preliminary" ISA for any projects that want the current cost allocation rules applied is viable.
- It is my understanding that, PJM even now has upgrade cost allocation to lower queued project going in service within 5 years. I would like to discuss with this group how different the proposed cluster approach would be.
- Business decisions have been made based on issued studies and the process that was in place when the project entered PJM's queue
- If a project has completed a SIS it should proceed under the current system.
- There should be a threshold to get off-ramp or ready lane. A project which has minimal upgrades (<5M - total cost) and/or in the facilities study for more than 2 years could be ready and should be grandfathered.

Off-ramp for Late-Stage Projects Question

- With imposition of Readiness Payment obligations upon all projects - regardless of decision to i) remain in serial study / current NU cost allocation or ii) transition to Cluster study process and updated cost allocation methodology - non-serious projects should rationally drop out, thereby clearing out the queue [and allowing parallel pathways of serial and cluster studies to avoid delay to both sets of projects]
- Any project that is in an "off ramp" condition should be able to meet these time frames so this is reasonable.
- There also needs to be postings required to cover any upgrades the project is dependent on from earlier queued projects.

Off-ramp Qualification Question

- A lot has been made about FERC precedent driving toward an "SIS in - hand" being the standard for being allowed to stand under the current rules. That may not be a completely apples to apples comparison. My guess is those precedents were set in an environment where queues were being processed in an orderly and timely fashion. If we want to say that "having an SIS in hand" is the right threshold, that still unfairly penalizes ICs who were following the rules and but for the somewhat arbitrary and significant delays might have had a SIS under the usual schedule. So if we wanted to change that standard to projects that "should have an SIS" by the time of FERC approval, I think that would easily include AH1, but for the delays at PJM.
- It's most equitable to give projects through AG2 this option, but consistent with FERC precedent using the SIS threshold as a key milestone in grandfathering queued projects from new cost allocation rules would be acceptable.

Off-ramp Qualification Question

- I believe projects with reasonable NU costs should have the same benefit, since there is a chance they can move forward as well.
- We believe an option to sign a "preliminary" ISA for any projects that want the current cost allocation rules applied is viable.
- We cannot stop developing projects as PJM contemplates new rules and until the new rules are defined it is not reasonable to determine what changes to make in development
- Practically speaking, we do not think it is possible for some projects with SIS in hand with network upgrades to opt to remain in the serial process, while other projects with SIS in hand to opt for the new cluster process. There are interdependencies between these projects, and they need to be re-tooled using the same model/timing/process.
- PJM needs to give an option to IC if they want to post LOC for their current network upgrade allocation and get out as well.
- For many queues, SIS results were delivered so long ago as to now be obsolete. There are many queue positions reflecting system upgrades for overages that are no longer present (for that position) due to withdrawals and retirements.
- Any project up to AG1 queue which has <5 million total network upgrade costs
- \$0 network upgrades should also be not dependent on prior upgrades and/or post for all potential risk and willing to sign the provisional IA

Readiness Obligation Question

- Projects with an incentive to socialize network upgrades will self select into a cluster option. The penalty for remaining in the serial process and then subsequently withdrawing, would be having to get back in line whenever the first cluster cycle is over.
- Readiness Obligation is key to ensuring that a transition serial queue doesn't get bogged down by a bunch of speculative queue positions. Suggest both a fixed and a variable component based on total network upgrades so that "cleaner" projects (with no NUs) face a lower cost of maintaining the serial cost allocation treatment vs. more uncertain projects. The cost for the latter has to be substantial, high enough to deter all but the most certain projects that have NU allocation. Suggest \$4k/MW + the greater of the project's NU allocation OR 25% of the total upgrade costs to which the project has cost allocation.

Readiness Obligation Question

- Rather than an additional readiness deposit/obligation, we believe the option to sign an ISA based on SIS results can effectively segregate late-stage projects vs. more speculative projects
- Every project is speculative as there is much more than a PJM ISA to having a successful project
- Not just the readiness obligation could be used to retain current serial cost allocation. If a project has minimum upgrades and the facilities study could be done, there is no need for readiness obligation deposit which could be refunded at COD. There should be higher readiness deposit in the transition clusters compared to the actual queue reform queues. This will help to clear the backlog even faster.
- An appropriately structured RO will have some deterring effect but the speculative projects should be inherently incented to opt to cluster study for shared cost allocation benefits.

Readiness Obligation Question

- Such a low percentage of projects actually survive the process. Given scarce resources the process should recognize earnest developers so that the time commitments can be met.
- Readiness obligations should consider a \$/MW or % of upgrades. Distinction between 'clean' and 'dirty' projects should be carefully considered as a 'dirty' project should not automatically be considered speculative given that interconnection upgrade costs could be sufficiently incorporated in commercializing the project.

Early ISA Question

- The option to request an ISA would be a good one as long as PJM would commit to providing System Impact Studies for projects that have applied through AH1.
- Especially given PJM's proposal to pull the rug out from under mature projects that have SIS in hand, they should absolutely be required to provide an off-ramp for such projects prior to implementation of the new rules. It would be patently unfair and unreasonable for PJM to neither offer something like this nor allow those projects to continue under serial cost allocation rules as part of the transition.
- Regardless of reform, this will help expedite a portion of the backlog
- We believe there is precedent for this and the option should be available.
- If this will reduce the queue, fine.
- Part of the current problem is the completion of Facilities Studies that PJM and developers have no control over.
- To the extent that the project has completed its facility study, PJM should be required to issue an ISA for that project.
- Yes, projects with zero network upgrades and the choice should be given to the IC after the retools until AG1 that if IC wants to post their portion of NU and get out.

Early ISA Question

- The above question didn't make any sense since I don't think PJM is stopping to issue ISAs if all required studies are done and facilities study is completed. PJM can issue ISAs up to AG1 projects if the required studies are done before FERC rules on any reform. Since its a required question i selected the third option.
- Simply put, until a process is changed it should operate as written in the guidance.
- Not sure the point of this as it is an option, you can ask for one now
- The question is not completely clear to me. Do you mean IC would ask for an ISA prior to receiving their SIS and/or Facilities Study Report and without knowing network upgrade cost allocation?

Additional Comments

- Any proposal that simply pulls the rug out from projects who didn't happen to get their ISA by the time FERC rules is not a serious proposal and is truly indefensible. At a minimum, any transition plan has to allow late stage projects with SIS in hand some avenue for continuing under existing rules, which is consistent with FERC precedent.
- We have heavily invested in our projects that are already in the queue based off the existing PJM rules, changing those rules now for late stage projects would be unfair, unjust and high contested at FERC.
- State jurisdictional projects seeking wholesale access that were instructed to apply for IX via PJM and have assigned PJM queue positions should not be removed from the PJM queue as part of the PJM interconnection reform process - particularly in the case that there is no state-level IX process in place for these projects to apply to. This is highly discriminatory.
- There needs to be open discussion and listening in this group and not the pushing of one agenda. There will be projects that benefit and those that don't. We need to move the projects forward, be able to process faster, weed out the projects (good or bad on upgrades it doesn't matter if they aren't getting built)

Renewable Coalition Poll #1 Details

- Renewable Energy Trade association calls were held on 9/16 and 9/17 with USSEC OH, CHESSA and MAREC members to discuss the Task Force efforts and review PJM's proposal
- From these calls, it became evident that the majority of renewable energy developers and IPPs were not aware of the possibility of material change to the cost allocation rules for existing queue positions
- Following these calls, a poll was assembled with the questions included on the following slides

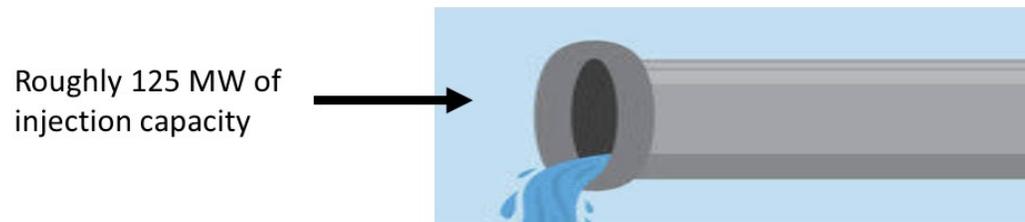
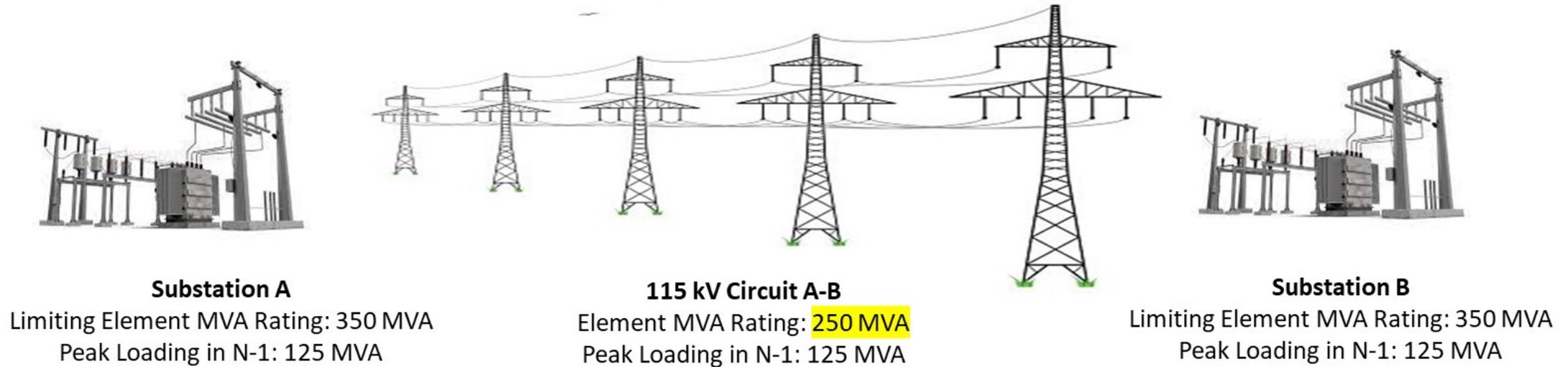
Summary of Additional Material

- Existing serial cost allocation rules have resulted in **many “clean” projects** that have System Impact Studies (SIS) that show \$0 network upgrade (NU) costs (or highly certain economic NU costs) through the AG1 queue. Some, but not all of these clean projects will have ISAs by the time FERC rules on PJM queue reform.
- **Avoiding harm** to these clean projects and providing some **choice** to ICs while **expediting transition** to a new cluster process will **help ensure timely FERC approval**.
- We can look to other RTO transition plans that have been approved by FERC for guidance on just and reasonable transitions....specifically with regard to treatment of late-stage projects
- PJM’s current cluster and transition queue reform proposal **would expose well-planned and clean projects to new, late-stage economic harm from new cost** allocation vs. their current “clean” results.
- ORR’s queue reform proposal would result in a **similar timeline to PJM’s** proposal while creating a **“ready lane” for late-stage clean projects** or those willing to meet significantly higher readiness obligations to stay under existing serial cost allocation rules.

Level Setting on Current PJM Serial Cost Allocation Process

- Date of entry into the queue matters (“**Queue Priority**” concept in OATT)
- “**First-to-trigger**” - The first queue position to exceed 100% loading on a network element pays for an upgrade
- Following the “first-to-trigger”, for upgrades <**\$5m**, queue positions **within the same queue window** that contribute to the overload share in network upgrades with the “first-to-trigger” queue position
- For upgrades >**\$5m**, **all** subsequent queue positions (for the next **5 years**) that contribute to the same overload are allocated their share of network upgrades
- Key Implication: If you have a “clean” SIS (i.e. you have \$0 network upgrade cost allocation or have highly certain upgrade costs) then **your project will most likely remain clean forever** and you can sign an ISA with confidence upon getting your facilities study results

Example: Current cost allocation methodology



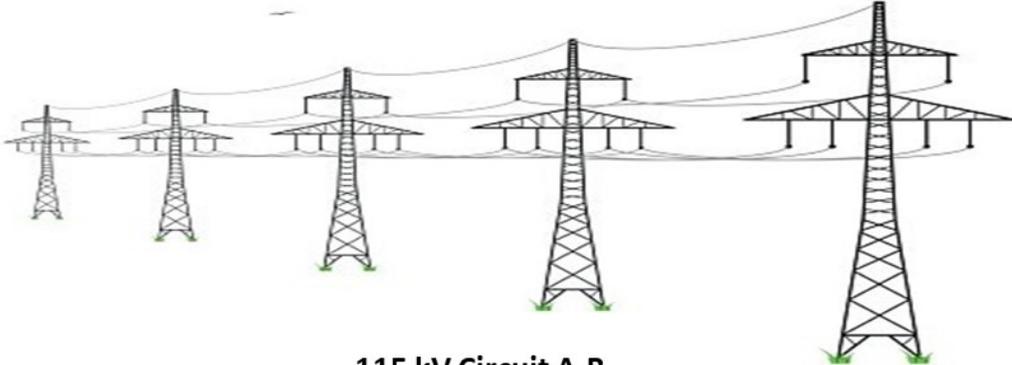
- 20 mile long 115 kV circuit with 250 MVA thermal rating and summer peak loading of 125 MVA. Assume that 115 kV line is the limiting element and has ~125 MW of injection capacity per the pipe analogy above.
- Assume multiple generators seek interconnection on this 115 kV line across multiple queue windows starting in AE1....

Example: Current cost allocation methodology



Substation A

Limiting Element MVA Rating: 350 MVA
Peak Loading in N-1: 125 MVA



115 kV Circuit A-B

Element MVA Rating: **250 MVA**
Peak Loading in N-1: 125 MVA



Substation B

Limiting Element MVA Rating: 350 MVA
Peak Loading in N-1: 125 MVA

Example: 100 MW AE1-XXX project filed a new generator interconnection request on 115 kV Circuit A-B in Spring 2018 followed by 50 MW AG1-YYY request filed on the same 115 kV Circuit A-B a few miles away 2 years later.

AE1 Queue
4/1/18-9/30/18



AE1-XXX: 100 MW MFO
"Clean" SIS Results Aug 2019

AE2 Queue
10/1/18-3/31/19

No queue activity impacting the loading of these elements or local network

AF1 Queue
4/1/19-9/30/19

No queue activity impacting the loading of these elements or local network

AF2 Queue
10/1/19-3/31/20

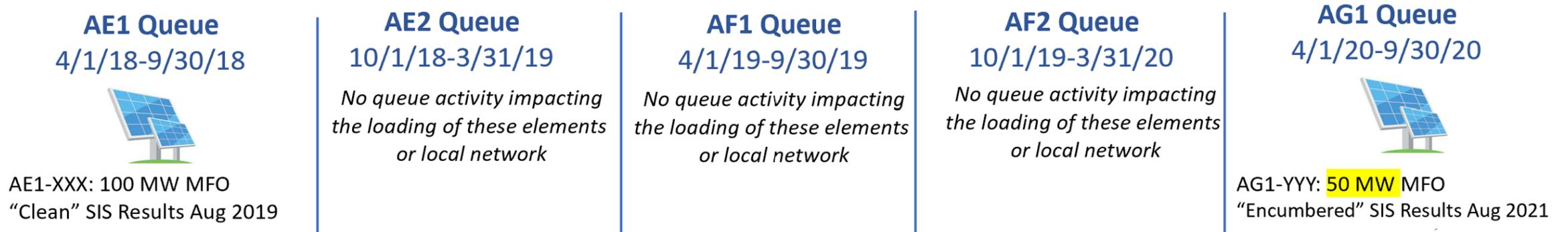
No queue activity impacting the loading of these elements or local network

AG1 Queue
4/1/20-9/30/20



AG1-YYY: **50 MW** MFO
"Encumbered" SIS Results Aug 2021

Example: Current cost allocation methodology



- Under the current cost allocation methodology, the 100 MW AE1-XXX project initiated in Spring of 2018 has a "clean" SIS (\$0 Network Upgrades)
- The 50 MW AG1-YYY that was initiated in 2020 is the "first-to-trigger" the overload of the 115 kV Circuit A-B and will have the responsibility for upgrading the 115 kV circuit
- Assuming a \$15M cost of reconductoring the 20 mile-long 115 kV circuit, AG1-YYY would post a \$15M security at the time of ISA execution
- Any generator that comes behind AG1-YYY and contributes to the overload for the next 5 years will have allocation of the \$15M upgrade

What is PJM proposing going forward?



Cost Allocation – Proposed Revised Process Example

- Cost for a required system upgrade is allocated among the queue projects which contribute to the need for the system upgrade.
- Cost is proportional to the MW contribution from each queue project.
- Re-evaluate minimum thresholds and update as appropriate
- **No queue priority** within a queue cycle – all contributing queue projects are subject to cost allocation.
- Cost allocation remains in the queue cycle which drives the need for the upgrade.

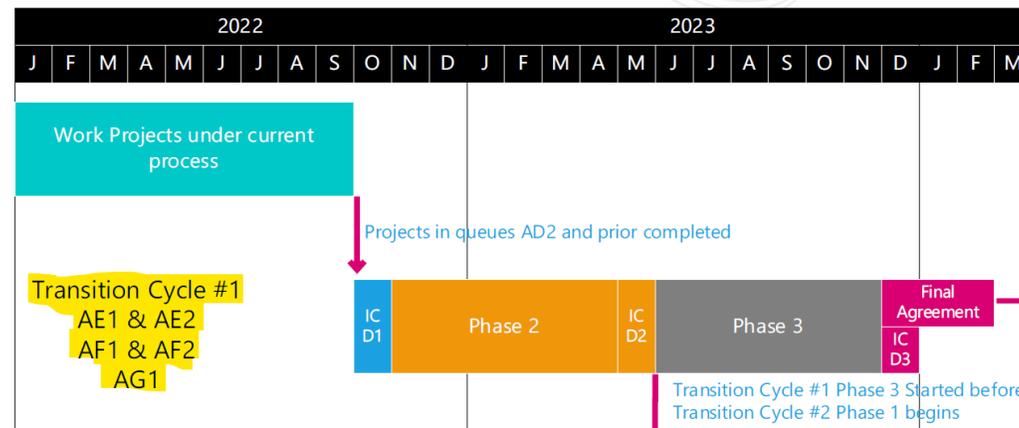
Queue Cycle 1	MW contribution	Percentage of Cost	\$ Cost (\$ 4.0 M)
Project A	10	25.00%	1.00
Project B	30	75.00%	3.00

From 7.14.21 proposal slide 21, new “cluster” based approach with **no queue priority** and no inter-queue funding.

What is PJM proposing in the Transition?

- Transition Cycle #1
 - AE1 and AE2 projects (250) & AF1 and AF2 projects (454) & AG1 projects (422)
 - Start in IC Decision #1 after providing retool results.
 - Require to post RD #2 and meet site control requirements to enter Phase 2.

From 9.17.21 proposal slide 22, **PJM is proposing to ‘co-mingle’ AE1-AG1 queues and study in one cluster with no queue priority**. Slide 24 shows the proposed schedule and reconfirms PJM’s proposal to ‘co-mingle’ AE1 through AG1 queues in one transition cycle that would be studied with newly proposed “cluster” allocation rules.

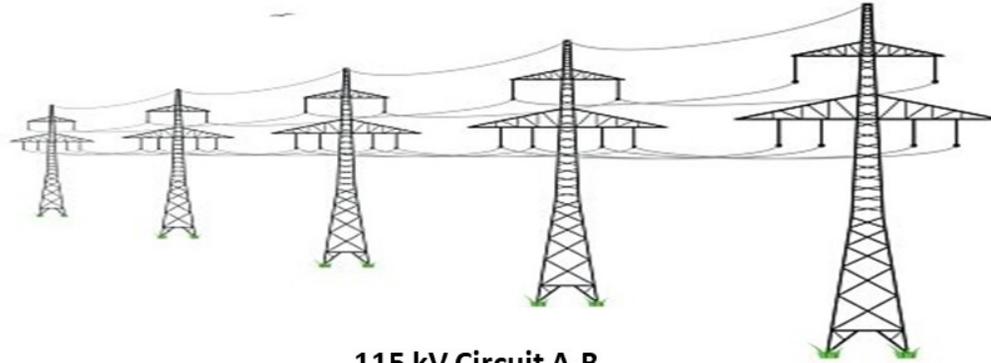


PJM's proposal under the previous Example



Substation A

Limiting Element MVA Rating: 350 MVA
Peak Loading in N-1: 125 MVA



115 kV Circuit A-B

Element MVA Rating: 250 MVA
Peak Loading in N-1: 125 MVA

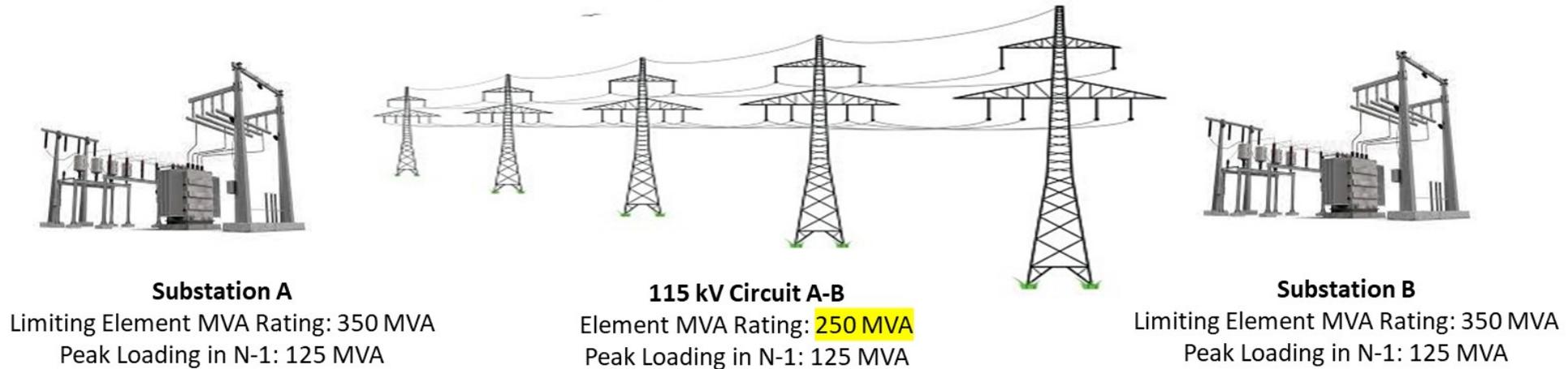


Substation B

Limiting Element MVA Rating: 350 MVA
Peak Loading in N-1: 125 MVA

- Under PJM's proposed "cluster" study proposed Transition Cycle #1 (AE1-AG1), power flow modeling of the 115 kV Circuit A-B loading in the Transition Cycle #1 would show that AE1-XXX 100 MW + AG1-YYY 50 MW collectively overload the 250 MVA capacity
- Under PJM's proposal, AE1-XXX would be allocated 66% of the \$15M upgrade cost and AG1-YYY would be allocated 33% of the \$15M upgrade cost (based upon the 100 MW sizing of AE1-XXX and 50 MW sizing of AG1-YYY)
- **Net result:** AE1-XXX which has a "clean" SIS in hand under existing rules and is waiting for a facilities study to sign an ISA now has a **new cost allocation of \$10M** (66% x \$15M)

PJM's proposal under the previous Example



- This is a patently unfair and unjust and unreasonable transition cost policy.
- Any approach similar to PJM's proposal that exposes "clean" projects with SIS in hand to new cost allocation will be vigorously protested before FERC as **unduly discriminatory and unjust and unreasonable**
- Projects like AE1-XXX entered the queue in Spring of 2018 under one set of rules (see PJM OATT expressly established "queue priority" in Appendix) and made financial commitments based on those rules and study results and should not be subjected to cost allocation from any projects that entered the queue afterwards, never mind those that entered the queue over a year later
- Filing such a contested proposal at FERC is **very likely to delay queue reform** which is a lose-lose proposition for everyone

What about PJM's Alternate Transition Proposal?

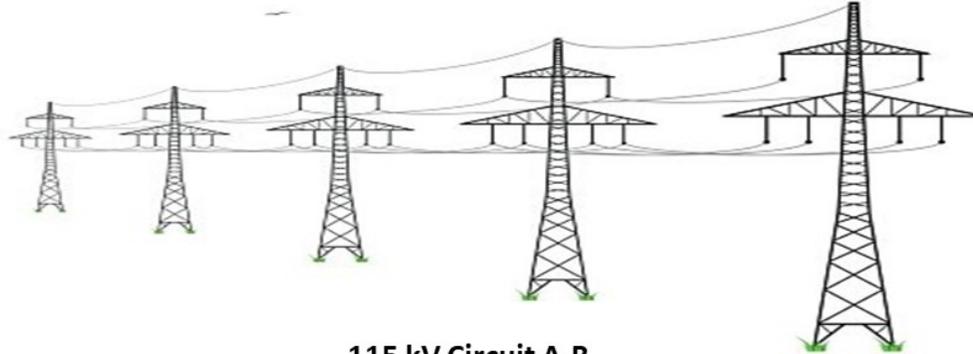
- Transition Cycle #1 - AE1 and AE2 projects (250)
 - Start in IC Decision #2 after providing retool results.
 - Require to post RD #3 and meet site control requirements to enter Phase 3.
- Transition Cycle #2 - AF1 and AF2 projects (454)
 - Start in IC Decision #1 after providing retool results.
 - Require to post RD #2 and meet site control requirements to enter Phase 2.
- Transition Cycle #3 - AG1 projects (422)
 - Start in IC Decision #1 after providing retool results.
 - Require to post RD #2 and meet site control requirements to enter Phase 2.
- Transition Cycle #4 - AG2 projects (654)
 - Start in Application Review and provide load flow model
 - Require to post RD #1 and meet site control requirements to enter Phase 1
- New Process Cycle #1 - AH1 & Beyond projects (630+)
 - Start in Application Review and provide load flow model
 - Require to post RD #1 and meet site control requirements to enter Phase 1

From 9.17.21 proposal slide 25, PJM is proposing to 'co-mingle' AE1-AE2 queues and study in one cluster with no queue priority. Then study AF1-AF2 in the next transitional cluster with no queue priority. Then study AG1 queue projects in the next transitional cluster with no queue priority....and so on.

What about PJM's Alternate Proposal?



Substation A
Limiting Element MVA Rating: 350 MVA
Peak Loading in N-1: 125 MVA



115 kV Circuit A-B
Element MVA Rating: **250 MVA**
Peak Loading in N-1: 125 MVA



Substation B
Limiting Element MVA Rating: 350 MVA
Peak Loading in N-1: 125 MVA

Here is a revised example to highlight how PJM's Alternate Proposal is similarly **unduly discriminatory and unjust and unreasonable**.

AE1 Queue
4/1/18-9/30/18



AE1-XXX: 100 MW MFO
"Clean" SIS Results Aug 2019

AE2 Queue
10/1/18-3/31/19



AE2-ZZZ: **50 MW** MFO
"Encumbered" SIS Results Feb 2020

AF1 Queue
4/1/19-9/30/19

No queue activity impacting the loading of these elements or local network

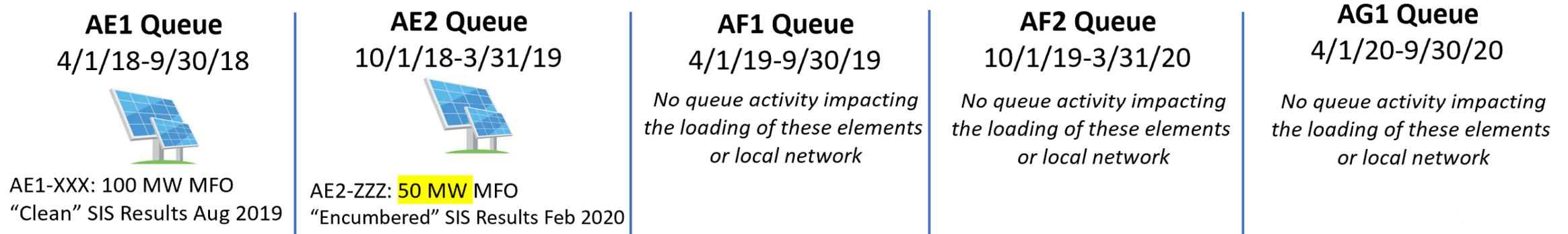
AF2 Queue
10/1/19-3/31/20

No queue activity impacting the loading of these elements or local network

AG1 Queue
4/1/20-9/30/20

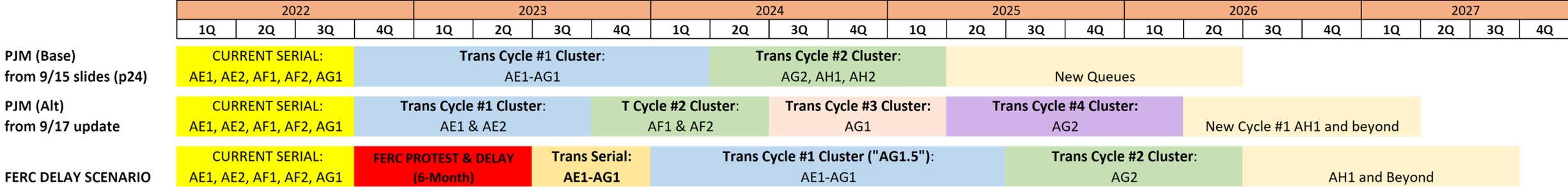
No queue activity impacting the loading of these elements or local network

PJM's Alternate Proposal Example



- Under PJM's Alternate Transition Proposal Cycle #1 (AE1-AE2), power flow modeling of the 115 kV Circuit A-B loading in the Transition Cycle #1 would show that the AE1-XXX 100 MW + AE2-ZZZ 50 MW collectively overload the 250 MVA capacity
- Under the "cluster-based" cost allocation, AE1-XXX would be allocated 66% of the \$15 upgrade cost and AE2-ZZZ would be allocated 33% of the \$15M upgrade cost (based upon the 100 MW sizing of AE1-XXX and 50 MW sizing of AG1-YYY)
- We believe FERC would similarly view PJM's Alternate Transition Proposal as unduly discriminatory by exposing clean mature queue positions to new costs through a retroactive change of rules

Delay of FERC Approval = Delay of Transition



- It is reasonable to assume that if the IPRTF is presented with a viable proposal that balances late-stage interests with transition expediency and, instead, pursues a proposal that favors expediency with disregard for ‘late-stage’ project interests, the likelihood of protest and delay at FERC significantly increases vs. a consensus proposal
- Therefore, we should all strive for a consensus proposal that strikes the right balance

Renewable Coalition Poll #1 Details

- Renewable Energy Trade association calls were held on 9/16 and 9/17 with USSEC OH, CHESSA and MAREC members to discuss the Task Force efforts and review PJM's proposal
- From these calls, it became evident that the majority of renewable energy developers and IPPs were not aware of the possibility of material change to the cost allocation rules for existing queue positions
- Following these calls, a poll was assembled with the questions included on the following slides

PJM Utility-Scale Renewables Poll on Transition

- Because the majority of PJM renewable Interconnection Customers had not participated in PJM’s Task Force efforts, a poll focused on the potential transition options was presented to industry groups representing the majority of renewable energy developers and IPPs active in PJM (see Appendix for more details).
 - 33 poll responses to date (75% response rate), with an additional 3 respondents declining to respond
 - No “affiliate” votes (i.e. each company gets 1 vote).
- Result was ***overwhelming support for “grandfathering” most/all projects with SIS in hand*** to continue under existing serial cost allocation rules
 - This result is generally consistent with PJM’s stakeholder poll result (noting the lack of support for Transition Option 1 on the Aug 23 poll results) despite lack of IC representation in that process.
 - This result is consistent with precedent that’s been established in the FERC-approved MISO, SPP, PSColorado, and Duke Transition plans

PJM Utility-Scale Renewables Poll Cont...

- Coalition Poll responses in favor of grandfathering projects with SIS results:
 - **32 out of 33 respondents support broad grandfathering of existing serial cost allocation rules based on an SIS milestone:**
 - 20 respondents in favor of letting projects with SIS in hand choose whether to be studied serially or under new transition cluster
 - Additional 8 respondents in favor of automatically grandfathering all projects with SIS studies in hand from new rules
 - Additional 4 respondents in favor of applying a minimal cost threshold for projects with SIS to be studied serially (ex. \$0 network upgrades, small network upgrades, etc.)
 - A number of poll responders commented that they would have elected to grandfather a broader list had the poll allowed it (ex. all projects that applied to the queue under existing rules)
 - Additionally, **>90% of respondents expressed support increased readiness obligations to remain in the serial process** as well as support for transition to a new cluster cost allocation process.

Renewable Coalition Poll Questions

1. Do you support the overall concept of moving the PJM interconnection process to a cluster process vs. a serial process?
2. Do you agree or disagree that existing queue positions with completed System Impact Studies should have the right to proceed under existing cost allocation rules (i.e. they should be grandfathered from new cost allocation rules)? Pick all options that apply.
 - Agree, all projects with completed SIS should be grandfathered.
 - Agree, but let developers choose whether to join the transitional cluster for each queue.
 - Agree, but only those queue positions with minimal network upgrade costs.
 - Agree, but only those queue positions with zero network upgrade costs.
 - Disagree, there are too many projects with SIS to grandfather.
3. In the interest of preserving existing cost allocation rules for projects that have their completed System Impact Studies, would you support accelerated securitization obligations that may allow PJM to more quickly process the existing serial queues?
4. Do you believe that one of PJM's guiding principles in this process should be to minimize harm to and consider the equity of changing the rules for advanced queued projects that have System Impact Studies in hand?
5. Do you have anything else to add about the transition to a new PJM queue regime?

Appendix: Renewable Industry Poll Invitees

Number	Company Name	Number	Company Name	Number	Company Name
1	Acciona	17	EDPR	33	Nextera
2	Algonquin/Liberty	18	Enel	34	North Ridge Resources
3	Arevon	19	Engie	35	Open Road Renewables
4	Avangrid	20	Eolian	36	Orsted
5	BayWa	21	Foundation Solar Partners	37	Pattern Energy
6	Borrego	22	FSLR	38	Pine Gate Renewables
7	Brookfield	23	Geenex	39	Primergy
8	Candela	24	Hecate	40	RWE
9	Capital Power	25	Heelstone	41	Savion
10	Clearway	26	Hexagon Energy	42	SolUnesco
11	Community Energy	27	Innergex	43	sPower/AES
12	ConnectGEN LLC	28	Invenergy	44	SunEnergy1
13	Cypress Creek Renewables	29	Leeward	45	Urban Grid
14	Dakota Power Partners	30	LightSource BP	46	Vesper
15	DESRI	31	National Grid	47	Walden
16	EDF	32	Navisun LLC		

The poll was shared via multiple individual emails to the above list of companies and with a broader group of companies via MAREC, USSEC, and CHESSA utility-scale company lists.

Notable Poll Responder Comments

- “It would not be “just and reasonable” if the new rules caused material damage to those who were playing fairly by the old rules. In other words, PJM’s proposed solution should not pull the rug out from under advanced stage projects (those with a completed SIS) that in some cases have had millions of dollars of investment sunk into them based on the current network cost allocation rules.”
- “Companies signed up for a known process and should live by the rules. If PJM wants to change the rules, it should be for projects going forward. I think having developers have a choice of whether or not they want to join the transitional cluster would be a good compromise, but it also would depend on how those rules work and whether or not clean interconnects would be impacted.”
- “Changing the process and increasing uncertainty for projects that are further in the process (SIS complete with clean results) would greatly harm invested value for developers.”
- “There should be a method to transition to a transitional serial process or a transitional cluster process. This is something with significant FERC precedent in other regions. One critical aspect of this is that PJM has a Facilities Study backlog larger than any other region in history. PJM's current proposal is benefiting later queued projects because it is creating massive transitional clusters. PJM should complete Feasibility Studies for all projects before queue reform was announced (AG2 and earlier) and allow clean projects to provide readiness to stay in a serial process.”
- “Ideally our position would actually go further than the multiple choice allows. We think that any project that has entered the feasibility study process should be grandfathered or have the option to stay in the serial queue process. All of those sites submitted for feasibility were selected and pursued based on proprietary investment theses that were developed with investments of time and money to determine optimal siting. Throwing these projects into a cluster, arbitrarily and capriciously negates the strategic benefits of those projects.”

Notable Poll Responder Comments, Cont...

- “The projects that should be allowed to move forward should not be dependent on other projects upgrades and should also have no upgrades (outside of IF and new switchyards as these are technically NUs).”
- “if securitization pre-ISA helps address PJM's concerns about the pace of serially processing facilities studies before they can move on to the cluster, then that's better than pulling the rug out from under billions of dollars in mature projects!”
- “The cleanest way to do this is to simply grandfather the projects with clean SIS results and no network upgrades. Any other way is too controversial and there will not be consensus among developers.”
- “An unexpected increased cost for older projects is unjust.”
- “Minimize harm to all projects, not just those with SIS in hand. The concern is that many projects should have received their SIS by now and have not. It doesn't seem equitable to treat projects in the same queue group differently simply because some have received their SIS and some have not.”
- “The precedent queue reform transition plans submitted to FERC by MISO, SPP, Duke and Colorado all grandfathered in projects with a completed SIS. We strongly advocate that PJM follows this precedent and believe it is within its members best interest and will be much more likely to receive FERC approval.”
- “Any PJM queue regime changes should be for any queue positions after AG to minimize harm to investment value for developers.”
- “PJM’s guiding principles in this process should be to minimize harm to developers and letting them choose whether to join the transitional cluster for each queue. Also, all projects with completed System Impact Studies should be grandfathered.”

Notable Poll Responder Comments, Cont...

- “From our experience with SPP, hiring additional contractors to help get through the backlogged projects before moving on to new cluster studies will be critical to ensuring that PJM's goal of speeding the process up is achieved.”
- “We would support even higher readiness deposit requirements in the transition queue if that would help clear the backlog quicker and help move the serious projects forward quickly.”
- “[COMPANY NAME REDACED] is a long-time PJM member and has been successfully developing wind and solar projects in PJM since 2001. We support PJM queue reform generally and an orderly transition to a cluster study approach to cost allocation. We are VERY troubled, however, that PJM would consider changing cost allocation rules in the middle of the game for projects that have been diligently investing in development based on existing generator interconnection rules. Project developers have invested tens of millions of dollars in advancing projects based on the PJM process as we have known it for many years. PJM’s current proposal literally throws many viable projects out the window and changes the rules of the game midstream. At best, PJM is placing tens of millions of dollars of investment at risk. At worst, this change will cause repercussions that could lead to the failure of projects and even whole companies. All projects meeting the existing rules of generator interconnection must be grandfathered under the existing process or have the option to do so. If not, the entire queue reform process will be at risk of litigation at FERC, and will end up taking even longer to resolve than if an orderly process is agreed to up front.”

Critiques of PJM 8/23 Poll

- Poll choices did not reflect preferred options of many ICs to give transition choice to developers with SIS in hand
- Rank order format forced votes for options that respondents did not support at all
- Insufficient participation by renewable ICs who are most impacted by retroactive rule changes skewed poll responses
- Affiliate votes skewed poll responses
- PJM proposal to minimize grandfathering did not reflect 8/23 stakeholder poll outcome