MN8's Comments on RRI and Surplus Interconnection

November 21, 2024

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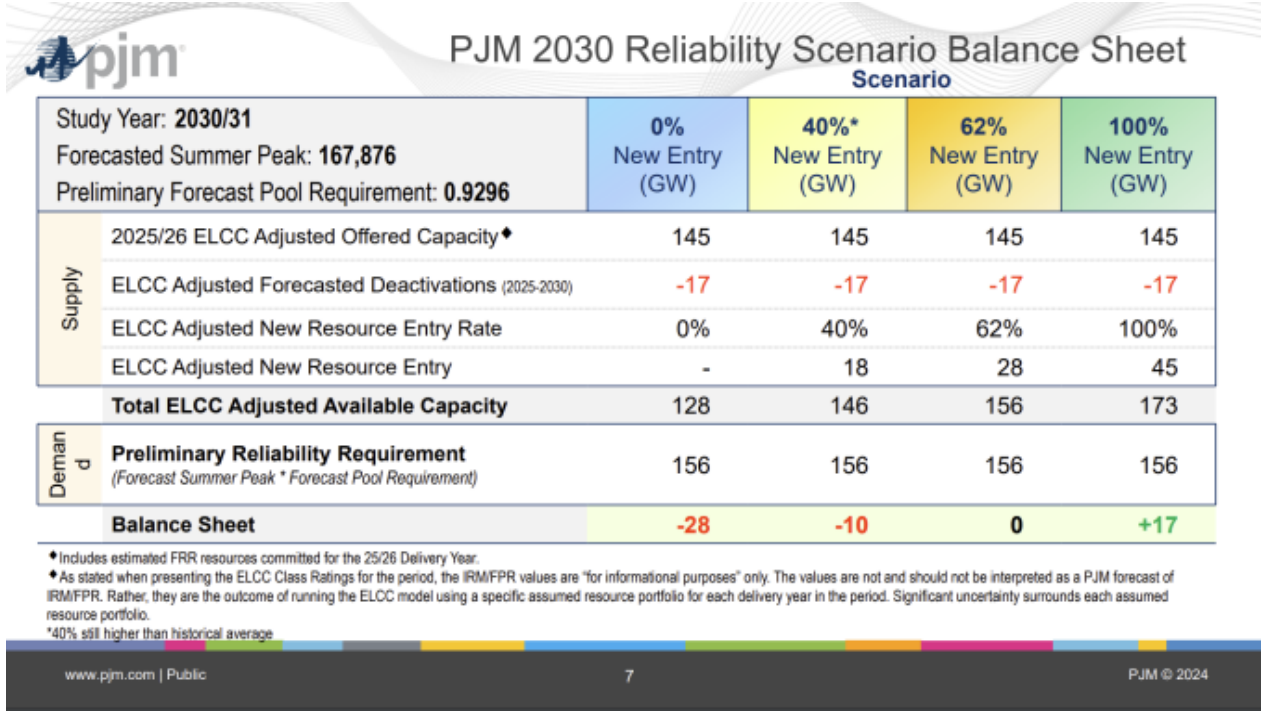
PJM needs TC2 projects (and RRI, if pursued) to have a high success rate and receive timely deliverability to meet resource adequacy needs

- PJM is proposing RRI to mitigate risks of a resource adequacy shortfall
- Projects from TC2 provide timely UCAP and should be considered as a critical part of the solution to the resource adequacy challenge
- PJM needs to ensure a high success rate for TC2 (and RRI) projects
- Success requires not only (i) that the projects ultimately get built, but (ii) that they are energized *with deliverability* in a timely fashion



PJM 2030 Reliability Scenario Balance Sheet

Study Year: 2030/31 Forecasted Summer Peak: 167,876 Preliminary Forecast Pool Requirement: 0.9296		0% New Entry (GW) Scenario	40%* New Entry (GW) Scenario	62% New Entry (GW) Scenario	100% New Entry (GW) Scenario
Supply	2025/26 ELCC Adjusted Offered Capacity◆	145	145	145	145
	ELCC Adjusted Forecasted Deactivations (2025-2030)	-17	-17	-17	-17
	ELCC Adjusted New Resource Entry Rate	0%	40%	62%	100%
	ELCC Adjusted New Resource Entry	-	18	28	45
	Total ELCC Adjusted Available Capacity	128	146	156	173
Demand	**Preliminary Reliability Requirement** *(Forecast Summer Peak * Forecast Pool Requirement)*	156	156	156	156
	Balance Sheet	-28	-10	0	+17

◆Includes estimated FRR resources committed for the 25/26 Delivery Year.
◆As stated when presenting the ELCC Class Ratings for the period, the IRM/FPR values are "for informational purposes" only. The values are not and should not be interpreted as a PJM forecast of IRM/FPR. Rather, they are the outcome of running the ELCC model using a specific assumed resource portfolio for each delivery year in the period. Significant uncertainty surrounds each assumed resource portfolio.
*40% still higher than historical average

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The overarching objective at this juncture should be the *timely addition of new UCAP*. PJM should be doing everything it can to ensure high success rates, and timely deliverability for TC2 (and RRI) projects.

The specifics of the transition to the new Generator Deliverability Test create attrition and deliverability slippage risks for TC2 & RRI projects

- PJM recently changed its generator deliverability ("GD") test to update its interconnection study assumptions (e.g., expected resource ramping, updated system deliverability needs, operational preferences)[1]
- Interconnection requests made under the Serial Process, Expedited Process (or Fast Lane), and TC1 were studied on models that used the ***legacy GD test***
  - Study results (i.e., violations and assigned network upgrades) were based on resource performance under the legacy study assumptions
- Beginning with TC2, all future requests will use models based on the ***new GD test***

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					

- All generation in TC2 study models, **including projects from the Fast Lane and TC1,** will be modeled under new study assumptions. Fast Lane and TC1 projects may trigger new violations under the new test that were not identified in any earlier studies (GI or RTEP).

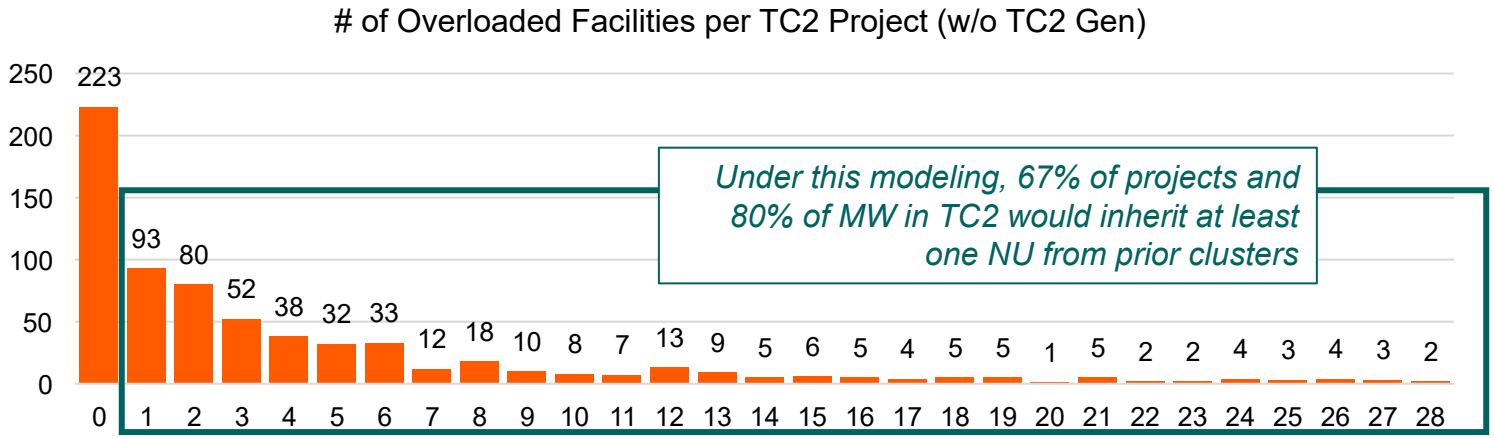
Unless Fast Lane and TC1 projects are studied under the new GD test in an RTEP, any violations caused by the transition to the new GD test will be passed along to TC2 (and RRI) projects.

1. https://www.pjm.com/-/media/committees-groups/committees/pc/2022/20220809/item-05a---generator-deliverability-proposal-summary.ashx
2. Table from Slide 15 of PJM IPS presentation from Dec 2023 https://www.pjm.com/-/media/committees-groups/subcommittees/ips/2023/20231221/20231221-item-04---ips-presentation.ashx

Our analysis indicates that there are material GD Test transition risks to TC2 and RRI projects in terms of costs and timelines

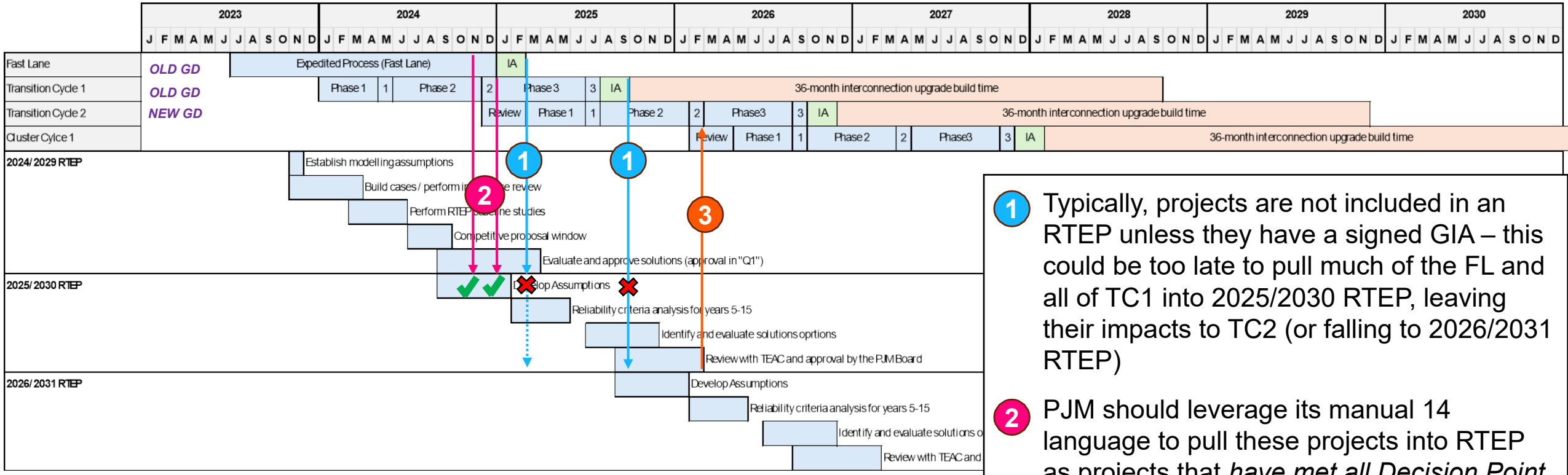
MN8 studied TC2 projects using the 2028 RTEP Case with Nira's software:

- In many cases, we found that monitored facilities that are not overloaded under the legacy GD test are materially overloaded under the new GD test *prior to adding any TC2 generators*. We analyzed the entirety of TC2 and found that of the 684 projects, 461 (67%) have overloads prior to adding TC2 projects to the case.
- We expect that some of these overloads will be addressed in the actual TC2 retool and study process.
  - For example, upgrades approved via the 2028 RTEP process (currently underway) and upgrades related to TC1 may solve some of these violations.
- However, there remains risk that overloads related to the GD Test transition for FL and TC1 projects will slip to TC2 and RRI projects, because many FL & all TC1 projects may not be studied under the new GD Test (via GI or RTEP) prior to the completion of TC2.



- If these impacts are not solved via RTEP, they will increase TC2 and RRI interconnection costs (= higher attritions rates), in addition to the number of contingent NUs for these projects (= slower time-to-market).

RTEP is the solution – NUs can and should be pulled forward so that they are captured in 2030 RTEP

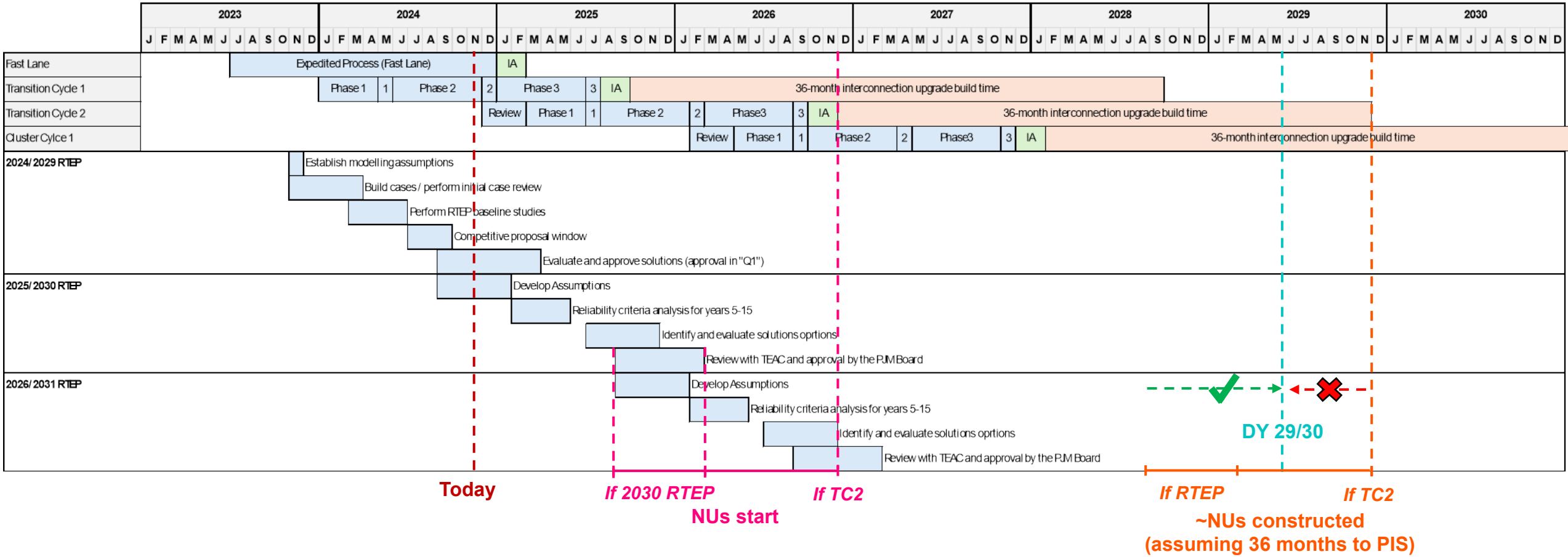


1. Typically, projects are not included in an RTEP unless they have a signed GIA – this could be too late to pull much of the FL and all of TC1 into 2025/2030 RTEP, leaving their impacts to TC2 (or falling to 2026/2031 RTEP)
2. PJM should leverage its manual 14 language to pull these projects into RTEP as projects that *have met all Decision Point II requirements*
3. It's critically important that PJM then finish the 2025/2030 RTEP in time for TC2/RRI projects to consider their impacts ahead of DP2

From m14b Attachment C, regarding which projects are included in RTEP:

Generation and Merchant Transmission Facilities that have proceeded at least through the execution of the final agreement stage of the interconnection process are considered in the model along with any associated network upgrades. If existing Capacity Resources and those with an executed final agreement are not sufficient to meet overall system demand levels then Capacity Resources that have met all Decision Point II requirements may be considered as well.

Accelerating GD Transition impacts in RTEP would also accelerate completion of NUs



By picking up impacts from FL and TC1 projects related to the GD transition, not only would PJM avoid inefficient cost allocation, increasing success rates in the process; it would also accelerate the NU construction timelines by 9-14 months, pulling forward project deliverability (and UCAP!)

In addition to accelerating RTEP fixes for Fast Lane and TC1 projects, we recommend several additional changes to RRI should it go forward

PJM should hold TC2 harmless for adverse impacts caused by RRI

Adding RRI projects to TC2 cluster studies will, in expectation, increase NU costs and construction timelines for TC2 projects. PJM can protect TC2 projects from NU cost impacts with two adjustments to its current proposal:

1. Parse out impacts related to **TC2 projects alone** versus **TC2+RRI projects together** in interconnection studies.
2. Determine NUs for TC2 projects first, solve cost allocation for **TC2 projects alone**, and then solve NUs needed for **TC2+RRI projects together**, with incremental costs being allocated to RRI projects.

These additional steps can be completed with minimal disruptions to timelines and administrative burden. Undertaking (1) and (2) above would mitigate legal risks, as well as cost/attrition risks to TC2.

RRI project intake process should be reworked to prioritize projects that can deliver timely UCAP

- The **cap should be defined in UCAP terms** (versus number of projects) based on the expected RA shortfall. This shortfall should be analytically-derived and vetted through an expedited stakeholder process.
- Projects should be **prioritized based on in service date** – projects that can be online (and deliverable) earlier are more valuable to PJM.
- Projects must offer in the BRA beginning with the DY that corresponds to their in-service date; failure to do so should result in **penalties equal to the price of replacement capacity**. Penalties will ensure that offerors are taking measures to ensure project viability while reducing administrative burden for PJM.
- By making these changes, PJM can greatly simplify its project selection process and select projects that will provide the most RA value.

PJM should commit to developing a workable surplus interconnection process

- Surplus interconnection service (SIS) may unlock as many as 7.7 GW UCAP in 2027. Because SIS can enable new UCAP without allocating additional CIRs, this should be considered low hanging fruit for bringing new RA to market.
- Further, as ELCCs decline, the potential for SIS to enable more RA will only increase.
- Tariff changes are a good start; we encourage a timely stakeholder process to develop manual language, including (1) a workable *material adverse impacts* standard, (2) a study process that does not inadvertently result in queue jumping, and (3) workable study assumptions.

Grant Glazer

grant.glazer@mn8energy.com

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