Avoiding the Credibility Trap:
A Proposal to Maintain Resource Adequacy

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1. I am Dr. Roy Shanker, Ph.D. an economist with 50 years of experience in electric markets. I have actively participated in PJM market design since the inception of the market. I am taking the unusual step of presenting my own proposal today because I think we are at a point of inflection, where decisions made now will determine the success or failure of RPM.
2. My view is that for all its faults and imperfections, RPM has delivered in its central mission – resource adequacy. But now, political and other forces seem to have combined in such a way that may bring about its demise. While PJM has laid out a problem statement of alternatives for a longer horizon transition, there is a need to address the immediate issues raised by the Reliability Backstop Procurement/Auction (RBP). I believe my observations are quite consistent with the sentiment reflected in PJM's own recent paper released May 6th, but I focus more on the immediate implications for the representation of RBP supply in RPM.
3. To be clear, without measures to protect investment incentives, the PJM proposed representation of RBP supply as price takers will greatly stymie new entry and the retention of existing resources, ultimately leading to a near -term resource adequacy problem. This result will occur regardless of any new market paradigm that PJM decides on for the future. This follows my long-held concerns, and PJM has acknowledged this in their paper as the "Credibility Trap".
4. As I see it, the current challenge facing PJM and its stakeholders is twofold: First, how do we maintain reliability when facing a perceived supply shortage? And second, how do we preserve a viable competitive market for Capacity Resources.
5. A simple hypothetical example can help illustrate these challenges:
    a. Imagine for a minute, to address forecasted reliability needs that reflect a reliability deficiency, 14 GW of operational capacity magically appears overnight in PJM as a result of the RBP. At first glance, this seems like an unambiguously good thing. Obviously, prices might be low as a result, but that just reflects supply and demand, right?
    b. But there is a problem here. Existing and potential new resource owners start to wonder if even more new supply will magically appear in the future when higher prices are anticipated. They also worry about recurrences of things like price collars and other regulatory intervention. If these worries are credible, will they want to put their capital at risk in the competitive RPM market structure? Probably not. Will they exit the market/retire existing capacity? It is certainly more likely. Will they sit on the sidelines waiting for a low-risk, out-of-market opportunity? Very likely.
    c. And PJM's recent track record – over-accreditation of capacity resources, price collars, and the introduction of RBP when markets are tight, while doing nothing when prices were very low – suggests these worries are very credible.
    d. The result is that price signals from RPM cannot be relied on to guide new investment and retirement decisions, the very foundation of the RPM initial design. PJM characterizes these types of problems as creating a "credibility trap." Resource adequacy now becomes dependent on repeated drops of magical new capacity

outside of the RPM process. And if those drops don't materialize, resource adequacy needs will go unmet.

e. If there is any hope of retaining a market-based structure that works, the price impacts of out of market new supply must be mitigated. Otherwise, long-term resource adequacy will suffer, and reliability requirements will default to a perpetual backstop process.
    i. Moreover, the facts on the ground indicate that some of the issues PJM references may not actually be happening – e.g., 811 new generation projects totaling ~220 GWs of capacity have entered the queue. One-sided market interventions now such as the RBP risk strangling this supply response at its inception and creating resource adequacy problems in the near term. Uncertainty in the marketplace discourages new entry.

f. This basic problem gets more worrisome as you consider the details such as load forecast error. For example, what if all the regulatory process complications lead to a delay in anticipated load arriving – not that it doesn't ever appear, but that it shows up several years later than expected?
    1. Assume the RBP procures 14 GW of new capacity and it is represented as zero priced supply in RPM, but only 5 GW of the anticipated load actually shows up when expected. There will be an indisputable surplus caused by the out of market supply, and the price signal in RPM will be for no new entry, and indeed for retirement.
    2. Next, assume two years later than anticipated, when the 14 GW of load shows up, the 14 GW of supply is no longer enough. New entry since the RBP has been stymied, some Capacity Resources have retired—which can occur much faster than bringing new MW online—and, once again, there is a shortfall triggering an immediate need for more capacity.
    3. This brings us to the initiation of further RBPs. PJM actually diagramed this cycle as the "Credibility Trap."

6. As proposed, RBP will procure a large amount of new resources under long-term contracts outside the RPM and then PJM proposes to include these resources into the RPM as price-takers for the duration of their contracts.
    a. This type of intervention will distort competitive market signals, with the impact being particularly pronounced if load growth is less than expected, potentially leading to prices that cannot sustain resource adequacy over an extended period.
        i. I am particularly concerned that we could see situations like this one where the RBP brings more generation than is needed, given that there is a strong financial incentive (with RBP resources offered as price takers) to over-procure. For that reason, PJM should remain the final arbiter for the load forecast as it is today.
        ii. And the long-term nature of the RBP intervention (with contracts up to 15 years) means that its impact will be felt for an extended period depending on the actual ramp up of new load. Coupled with entry lead times this will take

the market up to 18 years into the future. This will amplify the problem, particularly with the documented longer lead times for adding new generation.

7. Simple representations (excess capacity as price takers due to forecast errors and the impact of retirements) show the types of adverse impacts of the price-taking representation of RBP new generation: pricing inconsistent with actual market conditions and forcing new out of market intervention. Slides representing these types of possible results are attached within my MC presentation.
8. PJM's and others' documented efforts to limit the high end of the designed range of prices in the RPM has not been matched by symmetrical efforts to support prices when they were depressed.
    a. Immediately preceding the current tight market conditions, the RPM experienced a period of extremely depressed prices, with RTO prices clearing at 10-20% of Net CONE from 2022/23 through 24/25, and prices ranging between 10 and 50% of Net CONE for the entire period from 2012/13 through 2024/25.
    b. These depressed prices were likely a material consideration in recent exits of existing resources that would have been very helpful in maintaining reliability under the current tight conditions.
    c. Yet these depressed prices did not lead to a market intervention analogous to either the price collar or RBP; instead, the low prices were simply allowed to persist, and resource exits and low levels of entry were accepted as the appropriate market outcome.
9. If PJM continues on a RBP path where there is no long-term resource adequacy protection for merchant entry and the market-based price signals of RPM are undercut, PJM's real-world pattern of one-way intervention will be cemented into RPM for 15 years or even longer, if not perpetually. It will be internalized into the economic investment and retirement decisions of owners of potential new and existing capacity, and will chill new investment and drive the exit of existing resources (other than that procured by future RBP).
    a. PJM acknowledges in its recent paper that RPM will need to produce prices at or above Net CONE for an extended period in order to attract new entry, but warns that this economic reality is likely to "collide" with political reality. The truth is that RPM's durability will require making tough choices that prioritize sound market design over short-term political interests.
    b. New entrants will only invest if the present value of their long-term projection of average RPM prices is at least equal to their own resource-specific Net CONE. But interventions that limit the high end of the range and duration of allowable prices will depress the projected average below Reference Unit Net CONE if not accompanied by balancing measures that address downside risk (inclusive of RBP interventions).
    c. If resource owners perceive that the ongoing bias towards downward price interventions is likely to be sustained, then their projection of long-term average RPM prices will be structurally depressed below the level needed for new investment and thus new investment will not occur through the RPM.

i. Instead, new entrants will either not invest at all through the RPM or will wait for ongoing out-of-market opportunities (such as a follow-on RBP) that they anticipate will be necessary to maintain physical reliability.
ii. Similarly, existing resources will internalize this long-term bias and will be more likely to exit the market through retirement or selling into an adjacent market, particularly when faced with ongoing gating decisions such as nuclear relicensing and environmental upgrades.
iii. The result is the RPM will become starved of new investment and will see increased market exit by existing resources. This in turn will create the need for more follow-on out-of-market interventions to maintain physical reliability, further chilling market-based investment and retention and creating physical resource adequacy shortfalls.
    1. This "death spiral" has been observed in other markets in the past, such as California, where continued intervention (long term procurement) has been virtually the only source of new supply.

10. The first-best solution to this problem is to allow the market to work as designed and avoid ad-hoc out-of-market interventions. When this is not possible, as is the case with the RBP and associated reliability concerns, the intervention should incorporate elements that address the potential downsides for resource owners and investors and provide confidence that future interventions will not be one-sided. **The goal should be to isolate the impact of the out of market supply from the market-based process as much as possible.**
11. The RBP should incorporate protections against this downside risk to preserve the investment incentives needed to ensure long-term resource adequacy.
    a. While a proxy price mechanism for RBP resources would be the standard approach to ensure long-term resource adequacy, there are other mechanisms, such as a long-term price floor, as suggested by Shell, that would also work. In my proposal, I suggest a mechanism similar to the alternative proposed by the Joint Stakeholders whereby (a) RBP resources are kept out of the BRA, and (b) the lower of (i) the amount of load targeted for procurement in the RBP (assuming the RBP is successful, if not, simply use the amount procured), and (ii) actual large load in the corresponding BRA is also excluded from the BRA.
    b. This is a direct representation of the concept of "isolation." A major advantage of this approach is that it avoids the need for stakeholders, PJM, and FERC to agree on a proxy price or other arbitrary mechanisms (e.g. a floor) and is simple to implement. Further it is both inherently flexible in terms of the uncertainty with respect to the timing of new load growth.

(Please also see the associated summary slides presented in the PJM Stakeholder process)