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| S&P 500 | 2,171 | +25 | +1.09% |
| GlobalDow | 1,104 | +13 | +1.14% |
| Gold | 1,965 | +30 | +1.53% |
| Oil | 1,165 | +18 | +1.56% |
| | 77.56 | 0.09 | 0.12% |



POWER SUPPLY | GENERATION | FINANCIAL | MEMBER SERVICES | RISK MANAGEMENT | SUSTAINABILITY

Modifications to RPM to Accommodate State Public Policy Initiatives

July 17-18, 2017 PJM CAPPSTF



Background

- Load interests have consistently expressed a high level of concern about RPM
 - Proposed alternative construct prior to 2006 Settlement
 - Actively participated in Settlement
- Concept of Monopsony Power first raised in original settlement
- MOPR Rules changed; left with unit specific MOPR
- MOPR rules changed based on stakeholder efforts
- Polar Vortex and Enhanced Liaison Committee

Background: Currently...

- State actions to save units from retirement
- More calls for more expansion of MOPR
 - Not just select new units, but existing units
- PJM filed at FERC potential solutions outside of their stakeholder process
- Sense of urgency to “solve” this problem NOW despite consensus
- Deja vu all over again
- Over 27 major changes since 2010

Perspective

- ***We need to rethink our approach***
- ***We need to do so in a careful and considerate fashion***
 - ***Prior design changes have been rushed***

Perspective

- Constant rule changes since RPM came into being
- Major Themes
 - Construct is threatened
 - Construct not addressing “Missing Money”
 - Construct Inequitable
 - Load exercising monopsony power

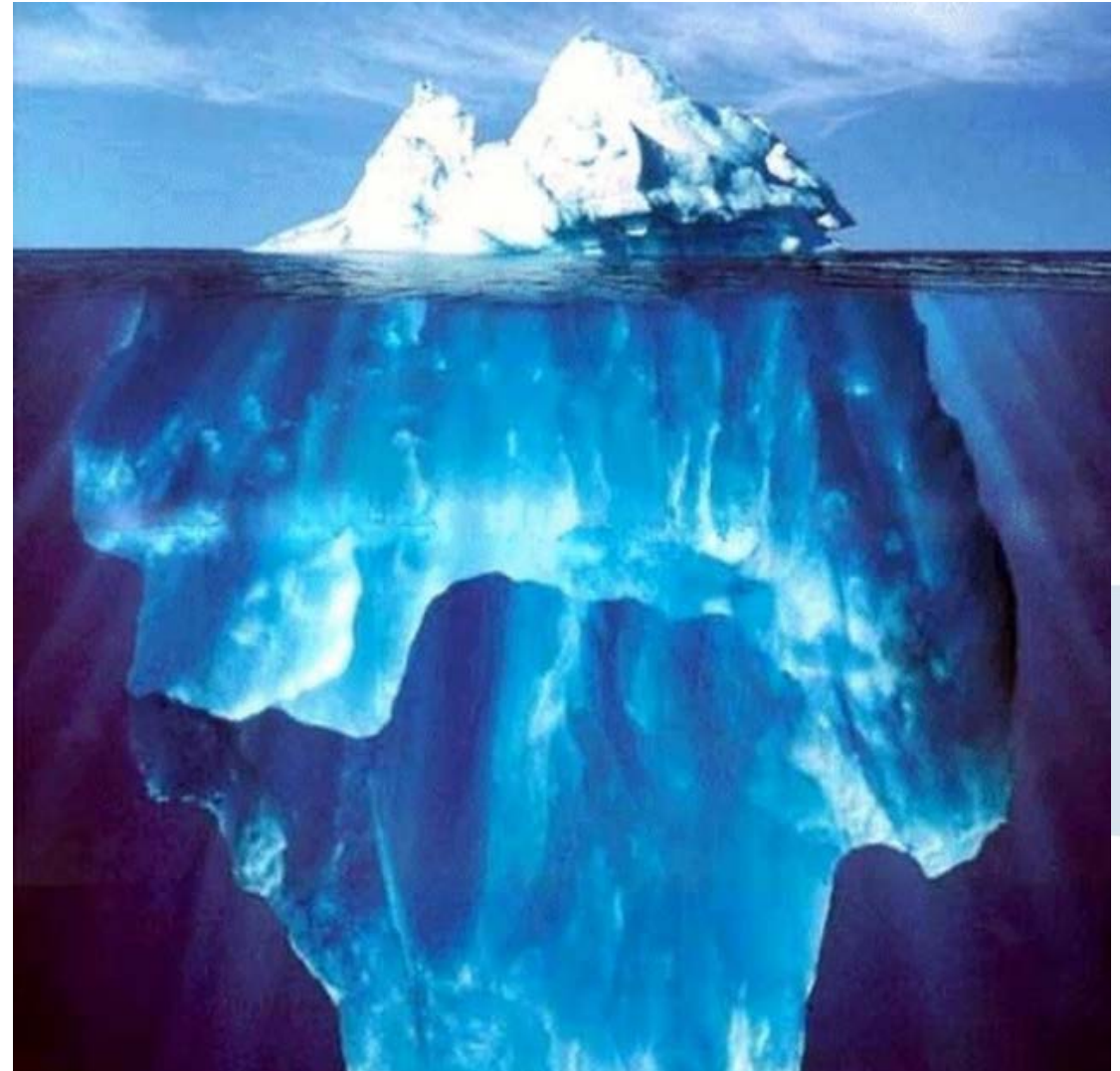
Results

- Overly Narrow Construct



Results

- RPM only addresses a small portion of the organic market



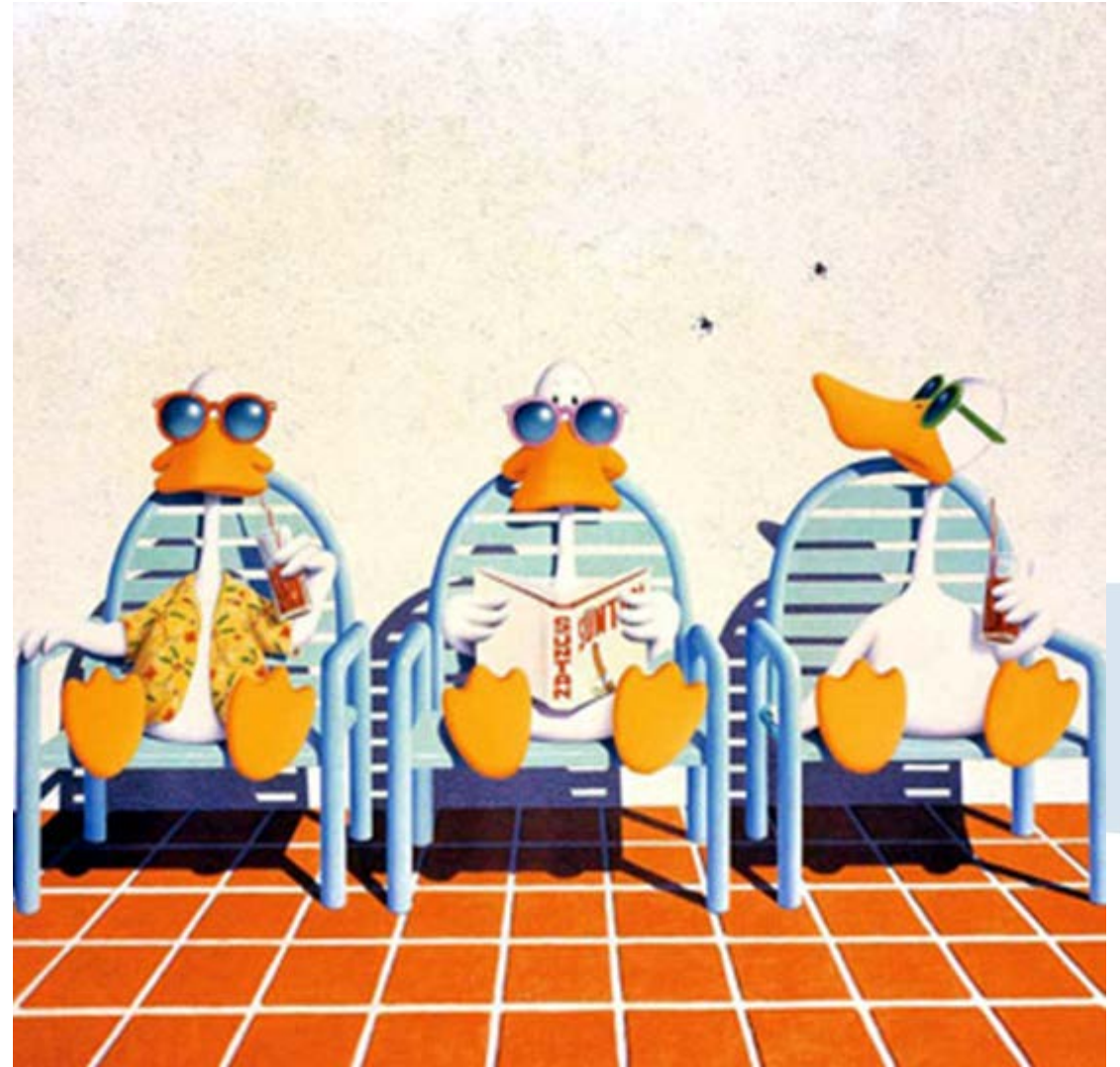
Results

- RPM has become Increasingly Complex



Results

- RPM is “Threatened”



Results

- Seem to be giving up on energy markets



Perspective

- RPM is an administrative resource adequacy construct
 - Not a market and actually is “threatened” by organic market events
- Understand and support the need for some type of construct for capacity
- But, we have strong empirical evidence RPM is not “working” in its current form
- Yet we continue to do the same thing (tweak the construct) and expect different results

Perspective

“In theory there is no difference between theory and practice. In practice there is.”

Perspective

- In practice:
there are a lot more considerations and drivers for resource adequacy decisions than a one year price, three years in the future
- In practice:
states are going to make decisions from their perspective of what is best for their voters
- In practice:
there are successful markets that have no need to control the actions of its participants
- In practice:
the capacity market is much bigger than the construct PJM has created
- In practice:
resource decisions and consumer choice will drive even more changes that will not “fit”

As a Result...

- Simpler construct
- Accommodates state policy decisions (Merriam-Webster)
 - to provide with something desired, needed, or suited
 - to make room for
 - to hold without crowding or inconvenience
- Reflects the reality of our “market”
- Control the things we can, accept the things we can’t, and have the wisdom to know the difference

Long-term, Bilateral Contracts in RPM

- Current construct does not incent long-term bilateral transactions
 - Buyer and seller expectations are not aligned
- We believe this is because Suppliers have an alternative to a long-term bilateral via an administratively determined result that could be higher for the short-term and has the hope of continued modification to ensure price is maintained
- Need to stop focusing on administratively determined price and let a market actually handle that component

Proposal

- RPM Components unchanged:
 - Unit Performance (CP) and Penalties remain the same (need to discuss improvements for renewables in future)
 - Unit specific procurement
 - Resource must offer Requirement
 - RTO Reliability Requirement (IRM process)
 - Locational
 - Demand Response Participation
 - Determination of CONE and Net CONE for reference unit

Proposal

- Modified Design Components
 - PJM determination of LSE local and regional capacity obligations XX months before the delivery year
 - Obligation is peak load obligation (PLO) plus IRM
 - PLO plus IRM determined by PJM and assigned to each LSE by 1/1 of Delivery Year
 - PJM identifies any location constraints and LDAs by 2/1
 - LSEs within constrained LDA's must obtain their pro rata share of capacity from within that LDA
 - PJM and IMM verification of load meeting its local and regional obligations
 - Procurement Period: Equal to or greater than 1 year

Proposal

- Modified Design Components (continued)
 - Replacement of the Base Residual Auction three years prior to the delivery year with a regional and constrained LDA Backstop Residual Auction (BRA) XX months before the delivery year
 - Supply and Load receives and pays local clearing price
 - Replacement of the VRR curve for price formation with a descending clock or other competitive auction design to match resources that are not self-supply or have not entered into a bilateral arrangement with an LSE to LSEs that have not satisfied PJM's load obligation requirements

Proposal

- Modified Design Components (continued)
 - MOPR for BRA only (i.e., not applicable to self-supply or bilateral transactions)
 - PJM continues to develop unit reference prices
- Other Possible Feature:
 - Transition:
 - Retain CP through 2018 BRA for 2021/22 Delivery Year
 - Implement new process for 2022/23 Delivery Year
 - LSE penalty of 50% of BRA clearing price for any deficiency of unsecured capacity relative to requirement (PLO + IRM)
 - Synonymous to deficiency charge for any load that clears real-time above that cleared day-ahead in the energy market
 - Penalty dollars are allocated, pro-rata, to all LSEs that have satisfied their requirement, similar to how CP penalties from under-performing resources are allocated as a bonus to over-performing CP resources
 - LSEs under 20 MW (PLO) are exempt from penalties

Proposal

- These modifications will enable RPM to meet its primary reliability responsibility by ensuring adequate resources to meet the 1 in 10 year reliability target, as well as address locational capacity delivery issues
- Replacing the VRR curve with a competitive styled auction, increased risk to suppliers and increased penalties to load will foster long term competitive bilateral contracts
- The Backstop Residual Auction (BRA) will provide the necessary last resort for uncommitted supply and load with remaining obligations

Proposal

- Transparency and price discovery will be maintained via the BRA, the IMM compilation of masked bilateral costs and durations, as well as PJM's triannual determination of relevant reference units
- Market power concerns will be addressed via a continuation of the must offer requirement for supply, as well as the BRA design and penalties for load; no MOPR is required

Proposal

States will be able to pursue any public policy initiative with resources that meet PJM established performance requirements

Proposal

- Still evolving
- Need feedback
- Suggested improvements