



Tailored Reform of PJM's Resource Adequacy Market Daymark/EKPC Package #2

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Overview of PACKAGE #2

THIS PRESENTATION DETAILS EKPC'S TAILORED DESIGN PROPOSAL

- EKPC's working definition of capacity is the planned for capability of a resource (physical asset) to deliver energy or provide ancillary services to firm load in each hour
- The purpose of the capacity market is to procure the lowest cost portfolio of capacity that meets the resource adequacy target (i.e., measured using LOLE/EUE)
- A good capacity market design supports efficient allocations of capital and coordinates the timely entry and exit of resources, consistent with maintaining regional reliability
- Cleared capacity must have the opportunity to recover its net going forward costs
- A resource must be able to manage/mitigate the risks it takes on when assuming a capacity commitment; a highly punitive penalty structure is counter-productive
- PJM must respect the operating constraints of the qualified capacity that it accredits and clears in the capacity market and recognizing these constraints schedule capacity resources to meet real-time load to ensure reliable operations
- The market must allow *self-supply* to meet resource adequacy obligations; the capacity market must not impose a preferred portfolio on a load serving entity

Common Design Components

Reliability Risks and Drivers | EKPC adopts PJM's hourly risk modeling, including weather, ambient air reductions, production profiles, and forced outages

Procurement Level and Metric | EKPC adopts PJM's requirements setting method, enhanced LDA requirements, and EUE/LOLH targets

Testing | EKPC adopts PJM's ICAP testing approach

Qualification | EKPC adopts PJM's resource qualification approach

Accreditation | EKPC adopts PJM's resource marginal ELCC accreditation approach. *NOTE: we do not believe that the ELCC accreditation model is the preferred long-term approach. However, while the total penetration of renewables remains relatively small, the problems with the method will be limited*

Obligations | All capacity resources must submit compliant offers into the DA and RT markets

Auction Timing and Procurement Periods | EKPC adopts PJM's seasonal market proposal

Market Monitoring | EKPC adopts PJM's proposal

FRR | EKPC proposes to retain the status quo FRR provisions

Performance Assessments (1 of 2)

- Resources are paid in hours in which they "perform," i.e., offer available ICAP into the RT and DA markets and follow PJM dispatch instructions. They are not paid in hours when they do not perform. The hourly capacity payment is established by dividing the capacity clearing price by 24 (assuming the price is daily as is the case today). All non-payments benefit firm load
- In each hour, a capacity resource will be paid: *(Available ICAP x the applicable hourly capacity price) x resource class ICAP adjustment factor*
 - Available ICAP is the maximum amount of power that the resource can reliably deliver in an hour
 - Resource Class ICAP adjustment factor is the following quotient, for each resource class: $(\text{ELCC-based UCAP}) / (\text{Average Hourly Adjusted ICAP})$
 - Adjusted ICAP is the hourly production or generation planned for in the RA model

For example:

if a solar resource has a class-based ELCC UCAP of 15% and class-based Adjusted ICAP UCAP of 30%, then payment in any hour would be multiplied by 0.5 to reflect the ELCC of the solar resource class

Performance Assessments (2 of 2)

- Capacity resources may, prior to the DA market offer deadline, assign qualified replacement UCAP to meet an obligation; commercial arrangements are bilateral
 - We expect resources that anticipate prolonged unavailability to seek bilateral arrangements to cover their capacity position until their availability is restored
- FRR may use qualified UCAP from their owned or contracted asset portfolio that have not been assigned to a capacity obligation to cover a position short term or long term – arrangements must be made prior to the settlement period
- PJM is responsible for scheduling resources. The portfolio of resources that PJM draws from are the capacity resources that it procures through the market and the assigned FRR resources. All qualified capacity offering into the market have limits on the way they can be used in operations, reflecting the physical attributes of each technology. PJM's operating schedules must reflect the physical limits on the qualified and cleared resources, including non-contract-related fuel access issues, start-times, and production profiles (for intermittent resources). A resource that correctly offers its Available ICAP but is not committed or dispatched by PJM is paid for its capacity – irrespective of system conditions
- If PJM determines capacity resources are needed to address a likely reliability condition, posturing the resources, up to and including committing them to allow for securing multi-day fuel packages or long notification and start times, is appropriate