



PJM Unforced Capacity Market Business Rules

The PJM Capacity Credit Markets – both daily and monthly – are implemented as described in Schedule 11 of the PJM Operating Agreement. PJM is responsible for the administration of both daily and monthly capacity markets, in accordance with Schedule 11 of the PJM Operating Agreement. Monthly (and multiple month) capacity credit markets provide an opportunity for load servers and resource owners to purchase/sell capacity credits for one or more future months in anticipation of obligation shifts. Daily capacity credit markets provide a final market based opportunity for load servers to meet day-ahead obligations.

PJM's capacity market is designed to meet the following objectives:

- ❑ Allow market participants to buy and sell capacity credits at market clearing prices that are established by the market clearing process and made public by PJM.
- ❑ Allow Load Serving Entities (LSEs) to purchase capacity credits to meet all or part of their obligation under the RAA.

General Rules

1. Participation in any PJM capacity market is voluntary.
2. An entity may use capacity credits to meet all or part of its capacity obligations.
3. A market participant may participate in the PJM capacity credit market through an agent.
4. Buy bids and sell offers may only be submitted to PJM by parties who are registered users of eCapacity.
5. Buy Bids and sell offers may only be for Capacity Credits, as defined in Schedule 11 of the PJM Operating Agreement.
6. A megawatt of unforced capacity credit satisfies a megawatt of unforced capacity obligation. Unforced capacity credits purchased from a PJM capacity market are not further adjusted for forced outages or other reasons.
7. Acquisition of a capacity credit does not entitle the holder to an FTR.
8. The Daily Unforced Capacity Credit Market will be conducted on a day-ahead basis. All buy bids or sell offers will be for unforced capacity credits applicable to the following day. As of July 1, 2003, multiple daily markets will be conducted on Friday or the day before a PJM Holiday. Sell offers or buy bids for a daily capacity credit market conducted on a Friday or the day before a holiday will designate the date for which the capacity credits are applicable.
9. Buy bids and sell offers are to be submitted to PJM through the eCapacity application. A market participant must contact PJM at 610-666-8869 prior to 10:00 a.m. Eastern Prevailing Time, Valley Forge, PA (EPT) if they are experiencing difficulty submitting a bid or offer through the eCapacity system.



10. Participants may submit voluntary buy bid/sell offers through the Market Bids/Offer tab in the eCapacity application.
11. A sell offer must specify:
 - Quantity of capacity credits offered (in increments of 0.1 MW)
 - Minimum price that will be accepted by seller
12. A buy bid must specify:
 - Quantity of capacity credits desired (in increments of 0.1 MW)
 - Maximum price that will be paid by buyer
13. Buy bids and sell offers must be submitted for a specific MW amount on an up-to basis, in increments of 0.1 MW. (The seller is willing to sell any amount equal to or less than the specified offer amount or the buyer is willing to accept any amount equal to or less than the specified bid.)
14. Participants may specify the priority (1 2, 3 ...etc.) in which they desire to have their voluntary bids/offers accepted into the daily market. If the participant does not specify a priority for the bid/offer, the priority of the bid/offer is automatically based on the order in which the bids/offers were created. The first voluntary bid/offer created will receive a priority of 1.
15. Participants may submit a standing buy bid/sell offer for the daily market that is effective for up to 31 days through the Standing Bids/Offer tab in the eCapacity application. Standing buy bid/sell offer process:
 - Participants may submit both a standing buy bid and standing sell offer for the same effective time period. The standing buy bid will be processed in the daily market if the participant has a deficient position. The standing sell offer will be processed in the daily market if the participant has an excess position.
 - Standing Buy Bid must specify the maximum price that will be paid by the buyer.
 - Standing Sell Offer must specify the minimum price that will be accepted by the seller.
 - Any voluntary bids/offers submitted by a participant will be accepted into the market first by order of the priority specified, before the standing buy bid/sell offer is processed.
 - Any MW amount leftover (participant's deficient/excess position minus the total MWs accepted into the daily market from the voluntary bid(s)/offer(s)) will be accepted into the daily market as a standing buy bid/sell offer.
 - If the participant does not submit a voluntary bid/offer, a standing buy bid/sell offer will be submitted and accepted based on the participant's deficient/excess position as determined by PJM at 10:00 a.m. EPT on the day the daily market is conducted.
16. Buy bids and sell offers for a daily market will only be accepted during a fixed bid window, which opens 07:00 a.m. EPT 19 days prior to the day the market date and closes 10:00 a.m. EPT on the day the market is conducted.



17. Buy bids and sell offers for a monthly or multi-monthly market will only be accepted during a fixed bid window starting at 2:00 p.m. EPT the business day before the market is conducted and ending at 10:00 a.m. EPT on the day the market is conducted.
18. Buy bids and sell offers, once submitted, cannot be changed or withdrawn after 10:00 a.m. EPT on the day the market is conducted.
19. The daily market is conducted based on the position of a participant for the market day estimated at approximately 10:00 a.m. EPT on the day the market is run.
 - If a participant is deficient, PJM only accepts buy bids up to the MW deficiency based on the bid priority specified.
 - If a participant has an excess position, PJM only accepts sell offers up to the MW excess based on the offer priority specified.
20. Monthly and multi-monthly markets will be conducted, as required, to match the interval structure. PJM will continue to post the monthly and multi-monthly market schedule on the PJM Capacity Credit Market web pages.
21. Monthly market participants may submit both buy bids and sell offers in the same monthly market.
22. A participant's buy bid price must be less than a participant's lowest sell offer price in a monthly or multi-monthly market. A buy bid with a bid price greater than or equal to the participant's lowest sell offer price will be rejected
23. Buy bids and sell offers are matched to satisfy the maximum number of buy bid requests at the lowest possible sell offer price that clears the market. The sell offer price satisfying this criterion sets the market-clearing price.
24. All credits are traded at the market-clearing price.
25. Market results are posted to participants' accounts and summary market results are posted to a public portion of the PJM internet site by 12:00 p.m. EPT each day (barring technical difficulties).
26. Participants can view the resolution of their buy bid/sell offer through the "Capacity Market" functional area in eCapacity. The status of their buy bid/sell offer will appear as cleared, partial cleared, not cleared, or rejected.
27. If a participant does not clear in the daily market, he/she still has an opportunity to buy and sell bilaterally to achieve their required capacity position.

Market Buyers

28. A capacity market buyer is either an LSE and party to the RAA or has a contractual obligation to sell capacity (including sales for resale) that will be used in the PJM control area.
29. A market buyer in a daily market cannot buy more capacity credits than their deficient position.



Market Sellers

30. A market seller may participate in any PJM Capacity Credit Market only to the extent that it has capacity credits available to sell in excess of its capacity obligation imposed under the Reliability Assurance Agreement (RAA) and other contractual obligations to sell capacity (including sales for resale).
31. A market seller in a daily market cannot sell more capacity credits than their excess position.
32. If a market seller becomes deficient as a result of sales in a monthly or multi-monthly market, the market seller is responsible for meeting all obligations outlined in Schedule 11 of the PJM Operating Agreement and the Reliability Assurance Agreement.

Interval Structure

33. The capacity market structure includes the following intervals for commitment, with separate monthly markets:
 - June to September
 - October to December
 - January to May
34. There will be at least two interval markets run prior to the start of each commitment interval. Individual monthly markets will be run prior to the start of each month within the commitment interval. Remainder of the interval Markets will be run within the commitment interval.
35. A unit's EFOR_d will be fixed for the entire interval and will be the rolling twelve-month EFOR_d bridged to eCapacity no less than 5 business days prior to the beginning of a commitment interval.

PJM Activities

36. PJM will operate the capacity credit markets, including determining the qualification of entities to become Market Participants, administering the markets, accounting for transactions, maintaining records of sell offers and buy bids, and determining the market clearing price.
37. PJM will prepare and maintain records of operation, including price at which the market cleared, the total volume of capacity credits purchased/sold, and other data.
38. PJM will determine the maximum MW of capacity credits each market seller may offer in a PJM capacity credit market, through verification of the availability of MW of capacity from:
 - Capacity resources owned by or under contract to the market seller
 - Rights obtained in bilateral transactions
 - Results of prior PJM capacity credit markets



39. For each planning period, PJM will update obligation parameters, including Forecast Pool Requirement (FPR), the ALM factor, the pool-wide EFORD (which will impact the capacity deficiency charge), as approved by the RAA-Reliability Committee.

Bilateral Transactions, Capacity Modifications, and ALM Modifications

40. All bilateral transactions for the next day must be submitted and approved by 23:59:59 EPT.
41. Both parties of a unit-specific transaction must confirm the transfer of installed capacity from the seller to the buyer via eCapacity. Both parties of a bilateral capacity credit transaction must confirm the transfer of unforced capacity credits from the seller to the buyer via eCapacity.
42. A unit specific transaction or a Capacity Modification (rerating of a unit) that will result in the seller owning more FTRs on a unit than they own installed capacity on the unit will not be accepted.
43. A unit specific transaction requesting FTRs that will result in the buyer owning more FTRs in a zone than their Network Service Peak Load (NSPL 1CP) in a zone will not be accepted.
44. A Capacity Modification (CAP MOD) that represents an increase in a unit's installed MWs must be approved prior to the daily market closing (10:00 a.m. EPT) for the effective date. A CAP MOD that represents a decrease in a unit's installed MWs may be approved prior to the start of the effective date provided that the decrease does not result in the party being deficient on the effective date.
45. ALM Modifications (ALM MODS) must be approved prior to the locking of the obligation for the effective date. (Although obligations lock daily at 12 noon, ALM MODs must be approved by 10:00 a.m. EPT)

Settlements

46. Participant sales or purchases associated with capacity credits cleared through a particular market will be billed as part of the monthly PJM billing immediately following the month in which those capacity credits are actually utilized.
47. If PJM determines that the market seller in a capacity credit or resource transaction did not have sufficient unforced capacity to support the transaction, the deficiency will be satisfied through payment of deficiency charges.
48. All LSEs must fulfill their capacity obligations, using capacity credits or unit specific capacity resources. Failure to match obligations and resources by midnight of the previous day results in deficiency penalties.



49. Each participant's deficiency will be measured on a daily basis. The daily deficiency will be assigned one of the following reasons: (1) MW change in obligation due to load shift or (2) MW change in obligation due to other reasons.
- MW change in obligation due to load shift would be the sum of all the zonal load shift obligations. The zonal load shift obligation is calculated as follows:
 - $(\text{effective day peak load} - 20\text{th day of previous month peak load}) * (\text{FPR}) * (\text{effective zonal scaling factor})$
 - If daily MW deficiency \leq MW change in obligation due to load shift, then the MW change due to load shift = daily MW deficiency
 - If daily MW deficiency $>$ MW change in obligation due to load shift, then the Daily MW deficiency – MW change in obligation due to load shift is the MW change in obligation due to other reasons
 - MW change in obligation due to other reasons, includes changes in bilateral or Capacity Credit Market transactions, changes in forced outage rates (between intervals), and ALM/CAP modifications.
50. If a participant is deficient due to a MW change in obligation due to load shift, the participant will be charged the daily deficiency rate.
- If a participant is deficient due to other reasons, the participant will be assessed a one-time charge equal to: (MW of deficiency) * (daily deficiency rate) * (number of days in the interval).
51. The CDR escalation factor in the RAA is eliminated effective July 1, 2001.
52. Deficiency charges will be assessed daily and billed monthly. Credits will be assessed and billed at the end of each interval.

Allocation of Capacity Deficiency Revenues

53. Recipients of capacity deficiency revenues that are collected during each interval are defined as:
- Owners of excess from committed resources.
 - To be eligible, owners must commit capacity resources to the pool prior to the start of the interval for every day of the interval. Owners of new resources that become available during the interval and commit those resources to the pool for every remaining day of the interval are also eligible.
 - LSEs that have fully satisfied their obligation for every day of the interval.
54. The alternate value of capacity is calculated as:
- The average of the Forward Market Monthly On-Peak Energy Prices over the commitment interval for Cinergy Hub – Average of the Forward Market Monthly On-Peak Energy Prices over the commitment interval for PJM West Hub) * 16 On Peak Hr/day * # of On Peak Days in Interval. This value will be determined for the 5 on peak days preceding the 15th of the month immediately prior to the beginning of an interval.



- The forward prices used in the alternate value calculation shall be the weighted average of the prices published, for the identified days, in such trade publication(s) as are approved by the Reliability Committee and which shall be posted on the PJM web site. If no new index is determined prior to the beginning of an interval the current index will be continued.

55. A Recipient receives the higher of

- a proportionate share of the deficiency charges for the interval equal to $((x + y)/z)$ OR
- (b) the alternate value of capacity times y.

Where:

- x is the average MW of covered obligation for an LSE for every day of the entire interval.
- y is:
 - the minimum MW of capacity held by a capacity owner for every day of the entire interval which was not committed to an LSE but which was committed in advance to the pool for the entire interval, OR
 - the minimum MW of capacity from a new resource held by a capacity owner for every remaining day of the interval which was not committed to an LSE but which was committed in advance to the pool for every remaining day of the entire interval, multiplied by the ratio of the remaining days to the total days in the interval
- z is the total of x and y for all LSEs and capacity owners
- If, for capacity owners, (b) exceeds (a), then capacity owners receive (b).
- If the total of (b) for all capacity owners exceeds the total capacity deficiency revenues, each capacity owner shall receive a share of total capacity deficiency revenues proportional to $(y/\Sigma y)$

56. LSEs receive the balance of the deficiency revenues, if any.

57. In no event will more dollars be distributed than have been received in capacity deficiency revenues.

Commitment of Capacity Resources

58. A committed resource (up to its designated MW amount of commitment) may not de-list during the entire interval. A committed resource is committed for the entire interval or the remainder of the interval (in the case of new units coming on line within the interval or existing units that experience a unit rating increase within the interval).

59. Capacity credits are not eligible to be considered as committed resources.

60. Resource owners (owners through direct ownership or unit-specific capacity purchase) can designate for the interval the MW amount of commitment from each resource through eCapacity application. The deadline for committing



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resources for the upcoming intervals posted on the PJM website.

61. Resource owners can designate the MW amount of commitment from a new unit coming on line within the interval or a MW amount of commitment from an existing unit that experiences a rating increase during the interval (up to the rating increase) after the corresponding Capacity Modification for the unit is submitted and approved through the eCapacity system.
62. Owners of committed resources may enter the resources into Unit Specific Transactions, Capacity Credit Transactions, or Capacity Credit Markets. This action will decrease the seller's "y" (used in the determination of the allocation of deficiency payments). Unit specific transactions involving resources committed for the interval have the potential to alter a buyer's "y".
63. If the direct ownership of a unit transfers to a new party within the interval, the MW amount of commitment associated with the unit transfers with the unit to the new owner.