

Fixed or Float 10-Year Lock

(A Hybrid ELCC Approach)

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Why?

It is not clear that ELCC will result in the most economic investment decisions for the PJM grid for the provision of capacity. An Average ELCC approach attracts new resources by reducing the accreditation of existing resources that may have otherwise been performing well. Because an existing resource is essentially a sunk capital cost it is not optimal for PJM to send market signals that act as if the existing resource no longer exists, especially if the marginal energy costs of both resources are zero. Customers will end up providing compensation of capital costs associated for more resources than are otherwise necessary. In addition, it is important that PJM send out signals to the marketplace that describe the characteristics of resources that should be built and then not immediately change those characteristics for those that were previously built. Large changes, such as the adoption of ELCC, should affect existing resources by means of a transitional manner.

The Average ELCC approach makes almost infinite room for new resources by cannibalizing the capability of existing resources. Finally, no other type of resource in PJM will have its capacity accreditation reduced solely because of a simulated dispatch model. Other types of resources receive a reduction in accreditation if performance declines. This is appropriate. We recommend performance continue to be the consistent characteristic of being able to maintain a capacity accreditation across ALL types of PJM capacity resources.

For this reason, we suggest a 10-Delivery Year Hybrid ELCC approach. This approach recognizes the existing value of resources and sends more appropriate investment signals associated with changing characteristics of the grid.

Fixed or Float 10-Delivery Year Decision

Each resource will make a decision that is binding for 10-Delivery Years. The 10-Delivery Years was chosen as being between those entities wanting a 20-year fixed period and those desiring a one year or, no more than a 5-year period. The 10-year period is also reasonably associated with preliminary financing for new resources.

New Resources (being able to first participate in a BRA or an FRR plan after the 23/24 auction):

- Fixed 10-Delivery Year - the forecasted Class ELCC% becomes the fixed Class ELCC% value for the next 10-delivery year period. The Unit-Specific Performance Factor is based on those hours applicable for that cohort at the time of election. A resource must continue to operate well to

maintain its accreditation - just as is done today. If it does not operate well, it will lose accreditation, just as it does today (an equivalent of the 368-hr rule).

- Float 10-Delivery Year Float - resource would use the PJM ELCC Method; including the PJM Unit-Specific Performance Factor associated with ELCC.

Existing Resources (having been able to participate in RPM or an FRR plan prior to the 23/24 auction)

- Fixed 10-Delivery Year - an existing resource, as having been able to participate prior to the 23/24 BRA may have its current class accreditation become its fixed ClassELCC% for the next 10-delivery year periods. The Unit-Specific Performance Factor is based on status quo. A resource must continue to operate well to maintain its accreditation - just as is done today. If it does not operate well, it will lose accreditation, just as it does today (an equivalent of the 368-hr rule). Any subsequent Fixed 10-DY choice will have the unit assigned a fixed value consistent with that of a New Resource-as described in the previous section.
- Float 10-Delivery Year - an existing resources defined as having been able to participate prior to the 23/24 BRA may elect the PJM ELCC Method, using the applicable annual ClassELCC% including the PJM Unit-Specific Performance Factor associated with ELCC.

Walking through an Example

The following are all hypothetical values. PJM will publish estimated ELCC values on a rolling 10-year basis. One expectation is the PJM forecast should be adjusted and become closer to the actual value as you get closer to a delivery year. Please utilize the table on the next page to go along with the following example.

A new wind resource signs its ISA in Jan 2022 and would like to offer into the **2025/26 BRA** (in highlighted light blue). It will make a choice whether it intends to elect the Fixed or Float 10-Delivery Year concept.. The wind resource would need to decide, for its first 10-DY period, whether it should take a Fixed-10 DY value of 8%, or if it believes the trend of the Float values will go higher or lower than the current 10-year out PJM forecast average of 8.5%. If the resource believes PJM's estimates will trend up as we get closer to the delivery year, the resource would likely chose the Float 10-DY. If the resource believes there is risk of these forecasted values trending downward from the forecast, it might elect the Fixed 10-DY approach.

The resources second 10-year choice will need to be made in early 2032 for participation in the **2035/36 BRA**. Because PJM forecasts 10 delivery years, there will only be 7 years of forward forecast data to make the next Fix or Float 10-DY decision. The resource could lock the ClassELCC% at 12% for the next 10-DY or chose the Float 10-DY (whose average value is 12.7% over the 7-yr forecast) if it believes the ClassAverageELCC% will not decrease much, or may increase in the yet-to-be forecasted 2042/43-2044/45 delivery years.

Delivery Year	PJM Wind ClassAverage ELCC%	Fixed-10 DY	Float-10 DY	Decision Point
2022/23	11			For beginning BRA 2025/
2023/24	10			
2024/25	9			
2025/26	8	8	8	
2026/27	8	8	8	
2027/28	7	8	7	
2028/29	7	8	7	
2029/30	8	8	8	
2030/31	9	8	9	10 Delivery Years
2031/32	8	8	8	For beginning BRA 2035/6
2032/33	9	8	9	
2033/34	10	8	10	
2034/35	11	8	11	
2035/36	12	12	12	
2036/37	13	12	13	
2037/38	13	12	13	
2038/39	12	12	12	
2039/40	12	12	12	
2040/41	13	12	13	
2041/42	14	12	14	
2042/43	Not yet forecast at decision point in 2032	12	Not yet forecast at decision point in 2032	10 Delivery Years
2043/44	Not yet forecast at decision point in 2032	12	Not yet forecast at decision point in 2032	
2044/45	Not yet forecast at decision point in 2032	12	Not yet forecast at decision point in 2032	

Must-Offer into RPM and Forfeitures

To maintain CLASSELCCMW accreditation, regardless of selecting a Fixed or Float 10-Delivery Year, a resource must offer available capacity into RPM. If a resource fails to make an offer into RPM, or is not part of a FRR resource plan, and has not received a PJM or FERC waiver, its accreditation value,

associated with any non-participant funded upgrades for CIRs (CIRs it received at no cost), will be forfeit and made available to new or existing resources that elect the Float 10-Delivery Year election.

The accreditation is forfeit until the resource's next election period associated with either the Fixed or Float 10-Delivery Year.

Future Limited-Duration Resources

All new limited-duration resources shall have a minimum run-time of no less than six hours. A transition mechanism is provided that would allow a previously built 4-hr resources to be the equivalent of a 6-hr resource for a 10-DY period. This can be accomplished by the existing resource electing the Fixed 10-Delivery Year concept. At the end of the 10-DY period, a 4-hr resource may either transition to a 6-hr resource, or its accreditation will be derated to that of a 4-hr resource under a Fixed 10 approach or may utilize the ELCC model under the Float 10-DY approach.

Why would I pick a Float 10-Delivery Year?

An ELCC value does not just fall, it can also rise.

If you believe the ClassELCC% value has 'bottomed-out' and will increase in the future, the Float 10-DY option makes intuitive sense because it will not lock you into a fixed, lower accreditation.

For example, MISO's value of ELCC for wind has gone from 13.3% in 2013 to 16.6% in 2020.

What about Gaming?

The forfeiture rule and 10-year lock in decision eliminate any back-and-forth elections, thus minimizing the risk of any gaming.

Why this Concept vs other Concepts?

The primary difference is the Performance Adjustment – the other packages looks at your performance vs the performance of others to allow for the distribution of available MW to be allocated more capacity to some units and less to others based on a model. This means that some resources could be allocated more accreditation, even though they had performed similarly. This package has the option of utilizing unit-specific performance and takes into account the hours that PJM says mattered when the resource was built. But we don't do this into perpetuity, just a 10-year lock. Or, if you think your resources can out-compete other resources in the black-box model, you may take that path.

As an example, here is a performance adjustment distribution that MISO used for the current Delivery Year. While the system-wide ELCC was 16.6% (the equivalent of the ClassELCC%), the actual distribution of that (via the performance adjustment) can have quite the unforeseen impact on a resource.

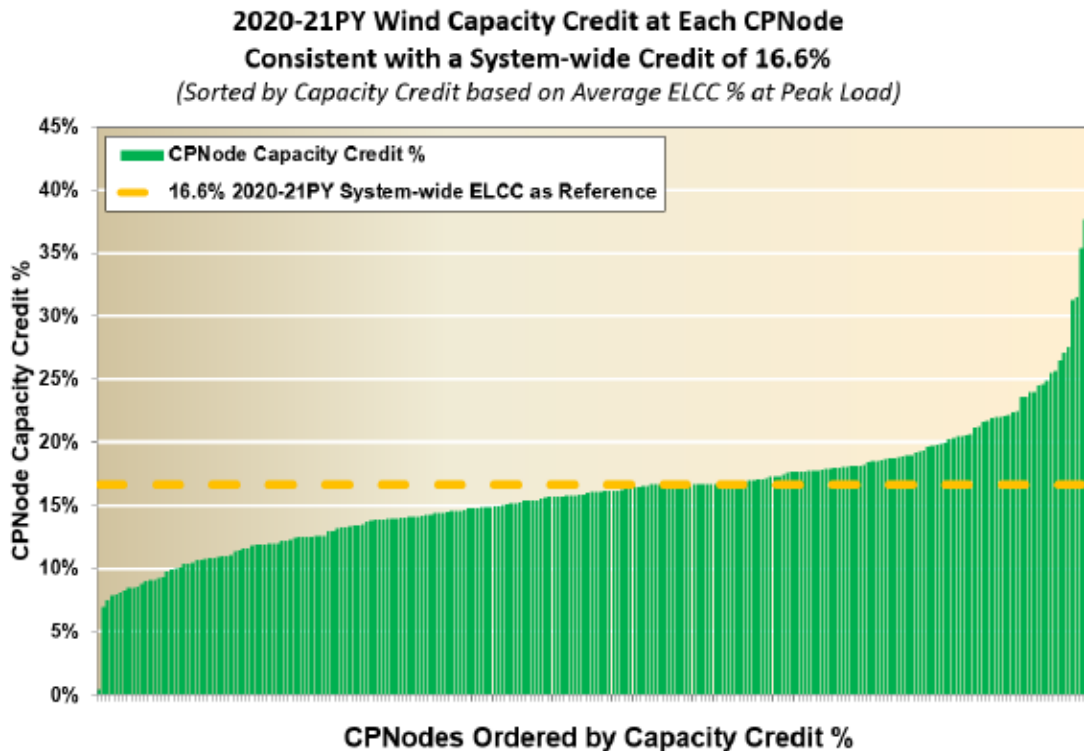


Figure 3-1 – Allocation of Capacity Credit % over 222 CPNodes
Consistent with a System-Wide Credit of 16.6%

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Once again, the Fixed or Float 10 gives the resource a choice of testing its accreditation in a manner that has been done for the last 20 years and is consistent with how all other resources test for accreditation, or allowing the ELCC model to provide you a number.

In addition, this package includes a must-offer into RPM or participation in a FRR plan that actively takes into account resources that have had no inkling of offering their output as capacity to the PJM system. Instead of allowing this to continue to take place, the accreditation value is forfeit, and the capability is provided to resources that want to offer capacity.

¹ <https://cdn.misoenergy.org/2020%20Wind%20&%20Solar%20Capacity%20Credit%20Report408144.pdf> pg 16