

# Initial Potential Responses to ELCC Deficiency Notice Questions

Andrew Levitt

Market Design and Economics Department

January 13, 2021

PJM Capacity Capability Senior Task Force

| Q | Description  | Plan                            |
|---|--|---------------------------------|
| 1 | E3 Delta method vs. simple method  | Work w/ stakeholders to clarify |
| 2 | Floor handling if class is redefined   | Work w/ stakeholders to clarify |
| 3 | Floor details: arithmetic behind supporting floors; how are groupings determined; what if the entire ELCC Portfolio cannot support floors. | Work w/ stakeholders to clarify |
| 4 | CIRs: interaction of status quo with ELCC policy   | Narrative answer                |
| 5 | Why not implement ELCC framework for a DY after its BRA  | Narrative answer                |
| 6 | Preliminary results  | Numerical answer                |
| 7 | Can hybrids participate as two resources?  | Work w/ stakeholders to clarify |

- January 19
- February 4
- [Looking for another February date]
- -- [Requested March 1 filing deadline] --
- March 4

- Decision to be informed by ELCC principles and background data from analytical results from ELCC model
- PJM can provide these for a CCSTF meeting prior to March 1 filing (targeting February 4)

## Q2: Floor Handling If Class Is Redefined

- If 2 classes with significantly different performance merge or split, the new ELCC Class Ratings would be significantly different from old, which would render the old floor values obsolete in the new context.
- For example:
  - If tracking solar and fixed solar share a class, and the class is dominated by tracking solar, then the Class Rating could be quite high, for example 60%.
  - A fixed solar unit in such class would be expected to have a Performance Adjustment of (for example) 65%, so that its final Accredited UCAP value would be 39% of its nameplate capacity.
  - Such resource could have a floor value of, for example, 55%.
  - If fixed solar were split into its own class, separate from higher-performing tracking solar, then the Performance Adjustment for such a unit would increase significantly (for example, to 105%) to represent its performance relative to other members of its class.
  - **In this case, it would not be logical to apply a 55% floor value using a 105% Performance Adjustment.**
- **Solutions?**

*“Floored” units are those for whom the applicable guaranteed floor rating value is above the final ELCC Class Rating value. Floored units therefore have their Accredited UCAP value calculated based on the their applicable floor rating rather than the current ELCC Class Rating.*

### **Proportional Class UCAP Reduction**

1. The ELCC analysis identifies a “pre-floor Class UCAP” derived without regard to floor guarantees. The sum of pre-floor class UCAP for each class in a group is the “Group UCAP”.
2. The Accredited UCAP of the units identified in the ELCC model cannot exceed the Group UCAP.
3. The Accredited UCAP of the floored units is fixed using the floor rating.
4. What ELCC Rating should be used to accredit the “unfloored” resources?
5. Solution: derive a “post-floor Class UCAP” by reducing the pre-floor Class UCAP of each class in the group **by the same factor** until the total Accredited UCAP of all resources in the model equals the Group UCAP.
  - *I.e.: those that are not floored are proportionately sharing the “cost” of supporting the floors.*



## Q3d: What If The Entire ELCC Portfolio Cannot Support Floors

FERC's Question: *"Is it possible for ELCC Class Rating floors to bind to such an extent that PJM would be unable to identify sufficient offsetting reductions in ELCC Class Ratings across the ELCC portfolio to preserve the ELCC Portfolio UCAP? If so, how would PJM ensure that ELCC Resources are not assigned an aggregate UCAP greater than the ELCC Portfolio UCAP?"*

### Relevant pending RAA language from PJM ELCC proposal:

*"The ELCC Portfolio UCAP shall be allocated to each ELCC Class UCAP, in accordance with the applicable effective load carrying capability analysis methodology specified in the PJM Manuals, as subject to adjustment in accordance with RAA, Schedule 9.1, section J, such that the aggregate of all ELCC Class UCAP values is equal to the ELCC Portfolio UCAP."*

- PJM question: in this scenario, apart from reducing the guaranteed floor ratings, is there any other logically possible way to *"ensure that ELCC Resources are not assigned an aggregate UCAP greater than the ELCC Portfolio UCAP"*?

# Question 7: Can Combination Resource (Hybrids) Participate as Two Units

- The ELCC model can accommodate a mixed-technology resource (i.e., two technology types connected behind the same point of interconnection) for which there are no significant interactions between the components as either a single Combination Resource or as either two separate units of the corresponding standalone resource type.
- However, the standalone resource modeling in the ELCC approach cannot capture significant interactions between the components, which would by definition affect their hourly output profile.
  - For example, the hourly output/charging profile of a standalone battery is not expected to be the same as the hourly output/charging profile of a battery co-located with a closed-loop hybrid with a power-constrained grid connection point.
- The only mechanism the proposed ELCC mechanism has to account for such interactions for hybrid units is via the Combination Resource classes, which accredit hybrids as a single resource, not as two separate resources.
- **Question:** is a requirement needed to clarify that mixed-technology resources with significant interactions between the components must be accredited as a single Combination Resource, and, in light of such interactions, cannot participate in the Capacity Market **as separate components**?
  - How should such clarification relate to the hybrid work at the DIRS?