Why Reform of CAISO's Deliverability Assessment Methodology Should Accompany & Inform CPUC RA Structural Reforms

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RA Structural Reform Workshop

CAISO's Deliverability Methodology is Incongruous with the Structural Reforms Being Discussed

- **CalWEA and others advocated the benefits of deliverability reform over 10 years ago**
- **RA structural reform discussions now underscore the *necessity* of reform**
  - To count toward an LSE's RA procurement obligation, or to its net load, a resource must meet CAISO's deliverability requirements to ensure that the resource's output can be delivered to load anywhere on the grid
  - CAISO's deliverability methodology is designed around extremely rare system operating conditions during the system peak
  - RA reforms are premised on the recognition that, with the shift from dispatchable to variable, use-limited resources, the focus must be on ensuring reliability over a much larger number of energy-delivery hours

… CAISO's Deliverability Methodology is Incongruous with Structural Reforms Being Discussed

- It would be nonsensical to prevent use-limited resources from obtaining deliverability status based on two exceedingly constrained system conditions while substantially increasing the number of hours relevant to the new RA paradigm
- In addition, it is important to consider the location of storage resources
- CalWEA, together with the CA Energy Storage Alliance, has formally submitted these concerns into CAISO's "Policy Initiatives Catalog" for consideration
- This matter requires consideration both in this CPUC proceeding and at the CAISO

Reformed RA Program will be Far More Successful with Deliverability Reform (1)

- Increase use of the existing transmission grid without affecting its load-serving capability
- Avoid overbuilding capacity due to phantom shortfalls
- Increase our ability to meet the massive near-term RA requirements, particularly given delays in transmission upgrades
- Enable many existing projects with EO status to obtain deliverability status, immediately increasing RA capacity
- Enable a large volume of new resources to interconnect and provide RA capacity without network upgrades

Reformed RA Program will be Far More Successful with Deliverability Reform (2)

- Increase the number of possible development locations
- More resources in the RA market increases competition, lowering RA costs, and benefitting ratepayers
- Load-serving entities will be more likely to fulfill their RA requirements
- Allow greater transmission planning focus on areas of the grid that are truly constrained

Worth the effort!

Before Getting into the Weeds …
What Are the Basic Issues Requiring Reform?

- The assessment methodology for determining whether a resource qualifies for full or partial deliverability is exceedingly conservative, focusing on two system conditions in a year, rather than the many hours in the periods of concern
  - This prevents resources that could provide RA capacity during most hours, including the evening net-peak, from interconnecting and providing RA capacity
- One element of deliverability assessment (SSN) is geared towards avoiding the curtailment of generators rather than meeting load during the most critical hours
  - Reliability is about meeting load, not avoiding curtailment of generation, which should be handled separately
  - SSN has been responsible for denying deliverability allocation to most resources
- A resource located in an LCRA is not allowed to provide local RA unless it qualifies as a system RA resource

The Weeds: Why the Assessment Methodology is Too Conservative

- **The CAISO's current deliverability assessment methodology is designed around two operating scenarios:**

  (1) High System Need (HSN) – assumes three system conditions are occurring simultaneously:

  - **an N-2 condition** (a very rare condition that was established by NERC for purposes of avoiding loss of load, not avoiding generation curtailment. Given the PRM, if one or a group of generators are curtailed under the extremely rare N-2 condition, other generators in other parts of the system can be called upon to meet load), and
  - **system dispatch conditions** where all generation in a particular area is operating at their near-maximum NQCs (also a very rare condition that is inconsistent with the CAISO's economic dispatch system), and
  - **a "peak-net-load condition"** when the system is most likely to experience a generation shortfall, i.e., summer evening hours (this is consistent with RA structural reforms)

… the Weeds: Why the Assessment Methodology is Too Conservative

(2) Secondary System Need ("SSN") – representing similar assumptions, except that:

- gross load is assumed to be at or near its peak level, and
- energy production from both wind and, particularly, solar resources with FCDS and PCDS status is assumed to be significantly higher than their NQC levels and as assumed in the HSN scenario
  - This assumption is aimed at avoiding renewable generation curtailment during times of high gross system load (such as a summer afternoon) and high production from variable energy resources when system need for this RA capacity is not critical
  - Therefore, applying the SSN condition is preventing resources that could provide RA capacity at the time of real system need from attaining deliverability status based on potential resource curtailment during times when such curtailment is not a system concern

Why Reform is Needed for the Process of Granting Resources Local RA Credit

- Currently, a resource located in an LCRA is required to qualify as a system RA resource before it is qualified to provide local RA
- Qualifying as a system RA resource could require transmission upgrades to deliver energy from, for example, a battery project in the L.A. Basin LCRA to the Bay Area LCRA (or vice versa), preventing it from providing local RA capacity in the Los Angeles LCRA
- This is nonsensical

Recommended Reforms to the Deliverability Assessment Methodology

- **Specific reforms should be discussed here, in the larger proceeding, and in a coordinated CAISO stakeholder process**
- **Generally, however, CalWEA recommends …**
  - **Reform the system dispatch and N-2 contingency level in the HSN scenario specific to each adopted season/time-of-day "slice."**
    - For each slice, the assessment methodology should reflect the expected net peak load (HSN) during that period
    - The rarest and most constrained system operating conditions could be considered for the most critical slice of day (the one with the highest net load)
    - The PRM can be raised if necessary to ensure that there are sufficient RA resources on the system

Recommended Reforms to the Deliverability Assessment Methodology

- **… CalWEA recommends …**
  - **Eliminate the SSN scenario altogether**
  - **Eliminate the requirement for local RA resources to attain system RA status**
    - Local resources will need to be studied under a local deliverability scenario and obtain a local RA capacity qualification
  - **Curtailment concerns can be addressed by including the SSN scenario in the off-peak deliverability assessment**
    - This can be used to award variable energy resources Off-Peak Deliverability Status (“OPDS”), which would give them higher priority transmission access and lower curtailments

Concluding Thoughts

- **During the rolling outages in August 2020, there was:**
  - **no N-2 condition**
  - **no unusual dispatch conditions**
  - **no extensive resource curtailments**

  Basically, there was a shortage of resources available in the evening hours, which has rapidly become the most critical period for resource adequacy
- **Removing unreasonable criteria in the deliverability assessment methodology will enable GWs of carbon-free resources to interconnect, helping to meet load in the most critical hours. <u>This is the goal of the CPUC's structural RA reforms.</u>**
- **RA supplies increase with no transmission upgrades required, thus lowering costs**
- **Transmission planning focus can shift to areas of the grid with true constraints**