

## 1. Unforced capacity concepts: Inclusion of forced outage rates in capacity counting/valuation.

It is appropriate for the CAISO to consider forced outage rates within the context of Resource Adequacy. Wellhead supports the use of the (UCAP) for CAISO's backstop provisions but is still concerned that implementation of the UCAP may have a significant effect on the value of current long-term RA contracts. As Wellhead has previously noted, past performance is not necessarily an accurate predictor of the future. For example, a resource may experience an unexpected and unavoidable major failure which would then affect its UCAP for the next 3 years, regardless of the event being cured and not anticipated to occur again. CAISO can mitigate the effects of this inaccurate counting by, using only the highest UCAP value over the last 3 years instead of the average. Using the highest UCAP value is more likely to capture underperformance due to poor maintenance practices but prevent a resource (and/or the off-taking LSE) from being penalized for a onetime event.

Wellhead supports the use of a 16-hour assessment period as proposed as this will allow resources the necessary time to take the unavoidable small un-planned outages that prevent larger failures from occurring and is therefore beneficial to overall reliability.

Wellhead does not believe that the CASIO should use the GADS system for UCAP calculations as it does not cover a large portion of the fleet and it is outside of CAISO's control, which will not allow CAISO the flexibility necessary to manage this program. Wellhead recommends that CASIO make the necessary change to its OMS.

## 2. Flexible RA concepts

The Flex RA requirements should ensure the CAISO has sufficient flexible capacity in the market to meet the ramping needs of the system. System flexibility needs include not only the 3-hour ramping requirement, but also the ability to meet the faster ramping period needed for load-following within that 3-hour period (i.e. the 1-hour ramping need). As shown by the CAISO in its recent Flexible Capacity Needs Assessment study, the 3-hour ramping requirements are only increasing, and as more renewables integrate the max 1-hour ramping need will follow suit. The ultimate Flex RA framework, eligibility criteria, and must offer obligations should work together to ensure the "right" set of resources are being shown for flexible RA and made available to the market. The "right" set of resources must be able to:

- Be available and capable of meeting the 3-hour ramping need,
- Be available and capable of meeting the 1-hour ramping need,
- Have minimal contribution to the Pmin burden, and
- Have shorter cycle times

Rather than maintaining multiple flexible RA categories, each with its own resource eligibility criteria, the CAISO could consider defining the operational needs of the system and perform an LSE-specific portfolio check against the operational needs. This performance-based portfolio approach would ensure that the portfolio of each LSE contains the "right" set of resources to meet the operational needs. Each LSE's portfolio would need to be able to meet (1) its allocation of the flexible capacity requirement per the 3-hour ramping need, (2) an allocated portion of the 1-hour ramping need, (3) be able to ramp at a certain rate (MW/min) for an hour based on the 1-hour ramping need, (4) does not contribute more than a certain MW amount to the Pmin burden of the system, and (5) contain resources with an output based on a minimum 4-hour duration. One potential way to allocate the 1-hour ramping requirement, and possibly the Pmin requirement, would be based on the LSE's load share at peak.

3. **RA showings and assessments. Please provide your organization's feedback on the RA showings and assessment topic. Please explain your rationale and include examples if applicable.**

Wellhead supports the CAISO's proposal to keep the existing showing schedule at this time.

- a. **Portfolio assessment. Please provide your organization's feedback on the portfolio assessment sub-topic. Please explain your rationale and include examples if applicable.**

Wellhead is not opposed to the use of any of the models discussed, but we strongly support further exploration of the use of the Integrated Optimal Outage Coordination tool. The use of this tool could not only prevent unnecessary cancellation of planned outages but could also be an invaluable tool for outage planning when RA supplies get tight.

4. **Planned Outage Substitution. Please provide your organization's feedback on the Planned Outage Substitution topic. Please explain your rationale and include examples if applicable.**

Wellhead supports CAISO's efforts to create an outage planning process that is transparent and dependable. Wellhead would encourage the CAISO to automatically match outage capacity with offered substitute capacity and possibly provide a means to automatically backstop if requested. Wellhead also encourages the CAISO to give some thought to how a methodology might work if RA supplies are tight (or simply not available in a local area) and what process a resource will need to navigate to get an outage approved. This is particularly important when lead times are required to secure outage services.

5. **CPM and Backstop authority. Please provide your organization's feedback on the CPM and Backstop Authority topic. Please explain your rationale and include examples if applicable.**

Wellhead has no comments at this time.

6. **Import RA provisions. Please provide your organization's feedback on the import RA provisions topic. Please explain your rationale and include examples if applicable.**

Wellhead has no comments at this time.

7. **Maximum Import Capability and Import Capability Allocation provisions. Please provide your organization's feedback on the Maximum Import Capability and Import Capability Allocation provisions topic. Please explain your rationale and include examples if applicable.**

Wellhead has no comments at this time.

8. **Must Offer Obligations concepts. Please provide your organization's feedback on the Must Offer Obligation concepts topic. Please explain your rationale and include examples if applicable.**

Wellhead supports CAISO's proposal to keep the MOO aligned with the NQC. Wellhead also supports bid insertion by resource type. Wellhead is open to exploring bid insertion by operating characteristics but

given the complexity we believe this discussion should be pushed out for the next round of improvements.

9. **Local capacity assessments with availability-limited resources. Please provide your organization's feedback on the Local capacity assessments with availability-limited resources topic. Please explain your rationale and include examples if applicable.**

Wellhead has no comments at this time.

10. **Slow demand response. Please provide your organization's feedback on the slow demand response topic. Please explain your rationale and include examples if applicable.**

Wellhead has no comments at this time.