



CAISO Processes and CPUC RA Reform

CPUC Workshop
September 21, 2022

Overview

- Given the changing RA fleet to one increasingly comprised of use and energy limited resources including a significant amount of storage, the CAISO is currently evaluating necessary RA reforms for all LRAs including consideration of CPUC slice of day reforms
- Interim measures may be necessary to operationalize the CPUC's new RA framework, while the CAISO develops comprehensive reforms

Background

Decision (D).22-06-050 (Appendix A):

Profiles and Net Qualifying Capacity (NQC)

All resources will still have a single monthly NQC value representing the deliverability adjusted peak-hour contribution. Most resource types will continue to utilize this NQC for their showing (and for CAISO deficiency determinations) while solar and wind will utilize hourly profiles and NQC in their Commission RA showings. NQC for wind and solar will be based on peak hour deliverable capacity based on their profile for that hour.

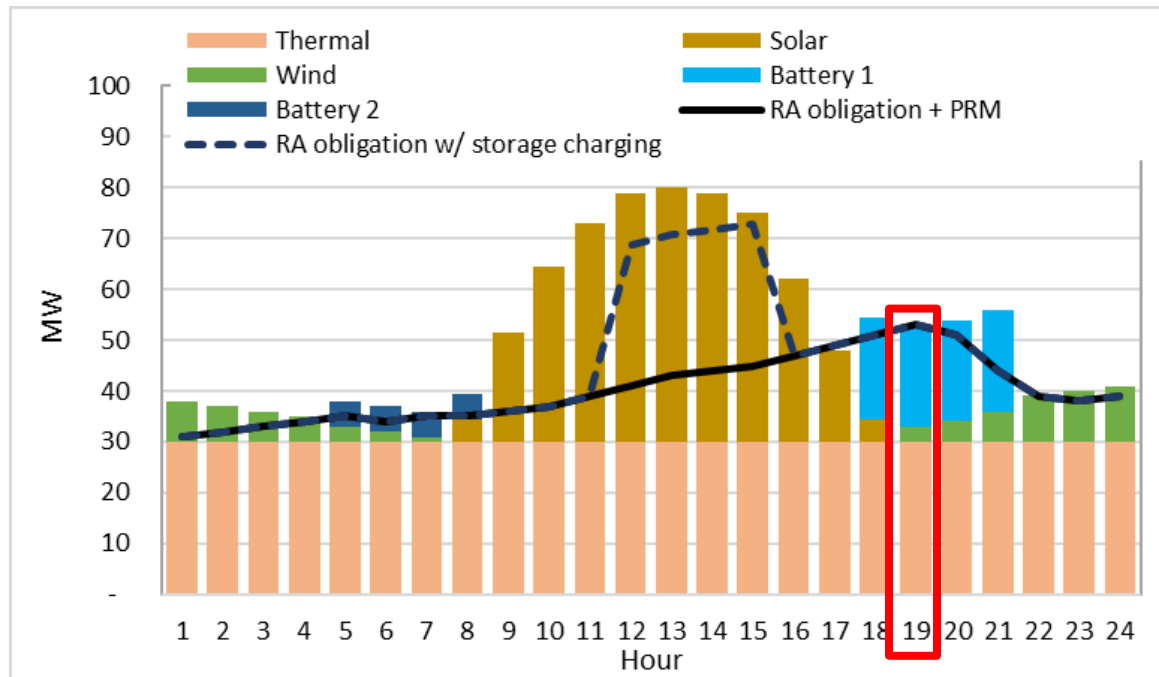
Current QC/NQC framework and CAISO processes

QC and NQC values currently flow into the following CAISO processes:

CAISO Process	How QC/NQC values are used
NQC list	QC values from LRAs may be adjusted by the CAISO for deliverability or other reasons (NQC); Deliverability is based on CAISO studies of resource capabilities to deliver output to load across the CAISO system
System assessments	RA shown by LSEs/suppliers is compared to coincident peak demand plus PRM, to determine whether LSEs meet overall system and individual system requirements
Local assessments	Resources are dispatched in local assessments based on the amount of the resource shown to the CAISO (shown RA as a % of NQC) to determine whether LSEs meet collective and individual local requirements
Outage substitution	Outage substitution obligations are based on shown RA
Must offer obligations	Must offer obligations are based on shown RA

CAISO compliance under CPUC RA Reform

- Showings to the CAISO based on the peak hour may not provide sufficient information for CAISO processes
 - For example, solar resources and Battery 2 resource are not shown in the peak hour
 - CAISO must have visibility into all resources used to meet the reliability of the CPUC portfolio in order to apply RA rules to these resources and dispatch resources in local assessments



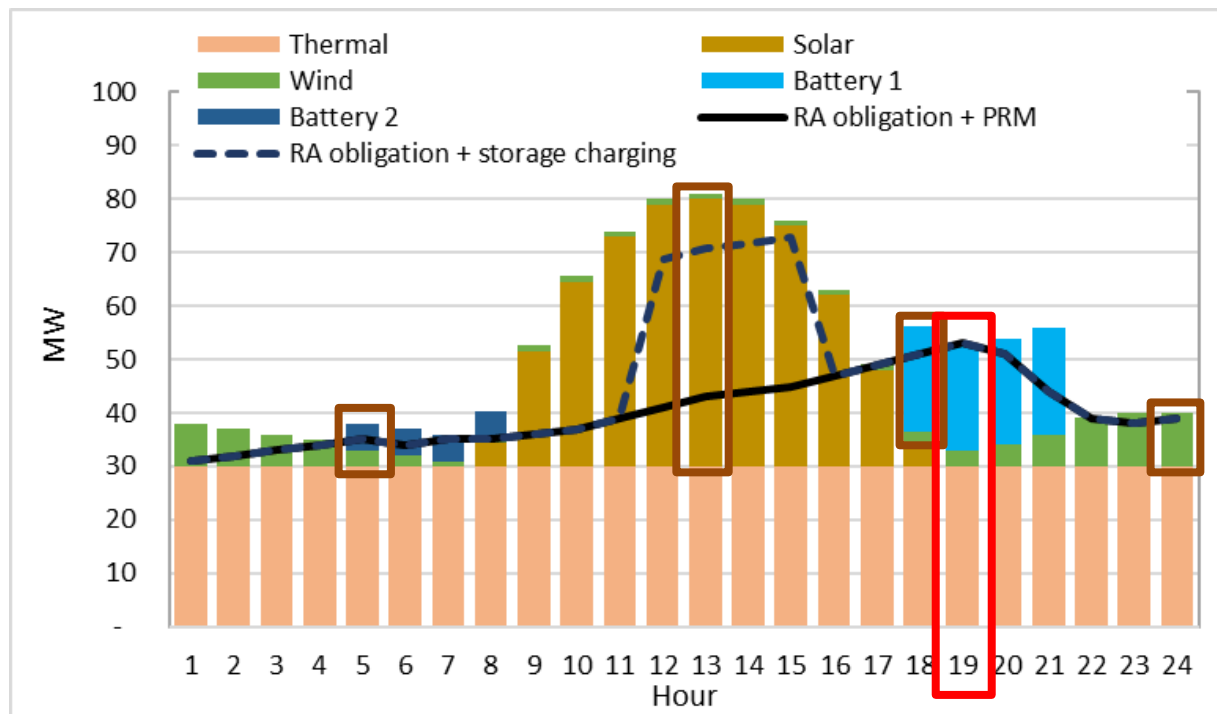
CAISO compliance under CPUC RA Reform

Showings to the CAISO based on the peak hour may not provide sufficient information for CAISO processes:

CAISO Process	Challenges
NQC list	Zero MW NQC values create challenges in downstream processes since the NQC list is a key point of reference for downstream calculations
System assessments	Peak hour showings could align with current CAISO system assessments
Local assessments	If a resource is not shown or has a zero MW NQC value at peak, CAISO cannot derive the percent of the resource shown in order to dispatch the resource in local assessments
Outage substitution	If a resource is not shown or has a zero MW NQC value at peak, uncertain how CAISO would apply an outage substitution obligation to the resource
Must offer obligations	If a resource is not shown or has a zero MW NQC values at peak, unclear how CAISO would apply a must offer obligation to the resource

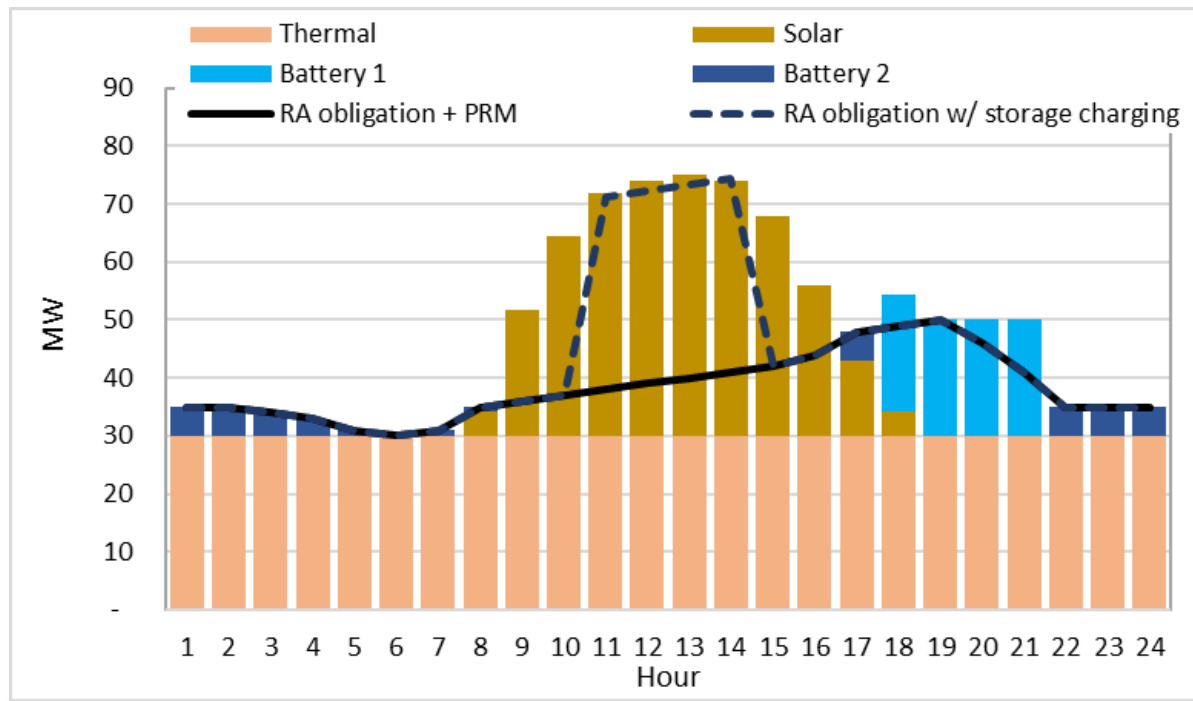
CAISO compliance under CPUC RA Reform

- Minimum data needs to operationalize CPUC RA Reform:
 - Peak hour showing values
 - Another value such as the maximum showing value to capture the whole RA fleet and to support downstream processes including local assessments and substitution obligations



Supplemental challenges - storage

- Standalone storage showings may introduce complexity for CAISO showings
 - *E.g.*, If a 40 MWh battery (Battery 2) QC value is 10 MW and the resource is shown to the CPUC for 40 MWh, the LSE/supplier would show 10 MW to the CAISO regardless of how the 40 MWh is spread across CPUC showings
 - Additional rules may be necessary for CAISO showings
 - CAISO must be able to set appropriate RA rules for the resource, and accurately model resources in local assessments



Next steps

- CAISO system and process changes, and timing of potential changes are subject to further scoping and assessment
- CAISO intends to open its own stakeholder process which will include operationalizing CPUC RA Reform and potential impacts to other LRAs

HYDRO DATA

Background

- Per Decision (D).22-06-050 (Appendix A):
 - *Dispatchable hydro resources will be assigned a single monthly value applied to all hours based on the existing QC counting methodology*
 - *Non-dispatchable resources will be assigned a single monthly value applied to all hours, based on the existing QC counting methodology, subject to availability constraints for each month*
- Counting methodologies and showings for wind, solar, and hybrid resources will account for energy limitations across a day
- Hydro resources are also subject to various energy limits
- Diversity among hydro resources may call for varying treatment under slice of day

Hydro energy limits

- At the August 23rd workshop, CAISO presented on the importance of accurately accounting for energy limits
- Hydro resources are energy-limited, and a single QC value applied to all hours may overestimate available energy
- Hydro availability may be limited by maximum daily energy limits or energy bids

