



R.17-09-020 WORKING GROUPS

QC Values for Hydro Resources



Background

- QC values for hydro are based on Pmax if generator is dispatchable
 - Can be lower if generator requests it
- Non-dispatchable hydro resources receive monthly QC values based on a 3-year rolling average of production during RA Measurement Hours (currently 4-9 pm)
- Tech factors are used for resources with less than 3 years of settlement data phasing in production data as it becomes available

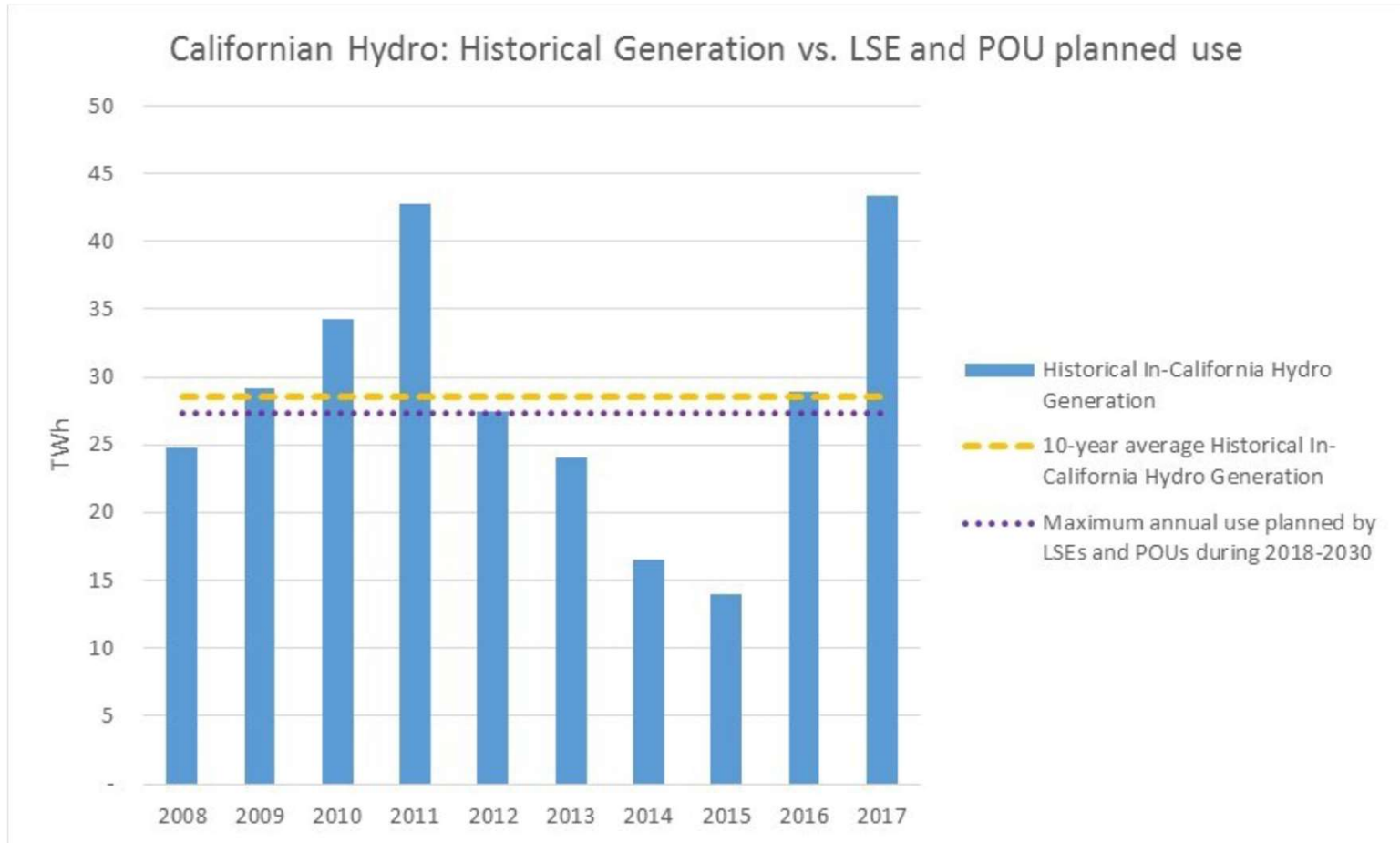


Previous QC Methodology

Hydroelectric: Pondage and Pumped Storage	QC= NDC- SO- [FO*]- VHD
NDC	Includes licensing and permit constraints
VHD	Variable head derate based on average dry year reservoir levels (essentially a look-up table that relates reservoir levels to capacity)
Average Dry Year	1-in-5 dry hydro scenario (e.g., use the 4 th worst year from the last 20 years on record)
FO*	Generic placeholder for forced outage factor if Commission decides to include
Hydroelectric: Run of River	QC= NDC- SO- [FO*]- CFD
CFD	Stream flow/conveyance flow/canal head derate based on average dry year stream flow/conveyance flow/canal head



Historical Hydro Generation



- Historical data indicates high sensitivity to drought conditions, as apparent in years 2013-2015



Track 3 RA Decision

- Appropriate to revisit the counting methodology for hydro and use-limited fossil resources
- Variability in water availability makes predicting true generation capability of a hydro resource difficult in the year ahead timeframe
- Both use-limited fossil resources and hydro resources, while able to generate at PMax, cannot do so at all times
- Recognizes the importance of allowing bidding behavior that maximizes the value of the resources and ensures their availability when they are most needed
- Energy Division directed to convene a working group on counting methodologies for hydro and use-limited fossil resources with the expectation that the group will submit a proposal into the RA proceeding in early 2020



Questions for Discussion

- What are the drawbacks of the current system?
- Should year-ahead QC values be conservative to account for uncertainty in water availability?
- If not, how do we account for discrepancies between QC values and actual generator capability?
- What other methodologies could be considered?