

2023 Market Development Forum

Integrated Resource Planning: The role of storage

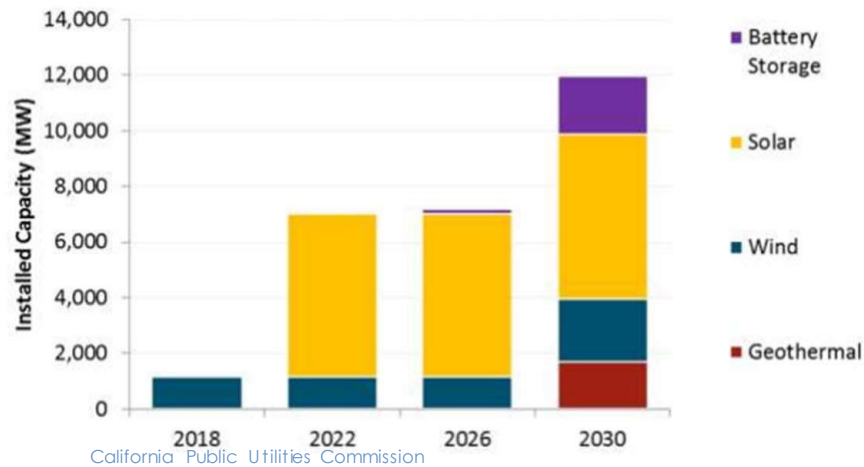
October 18, 2023



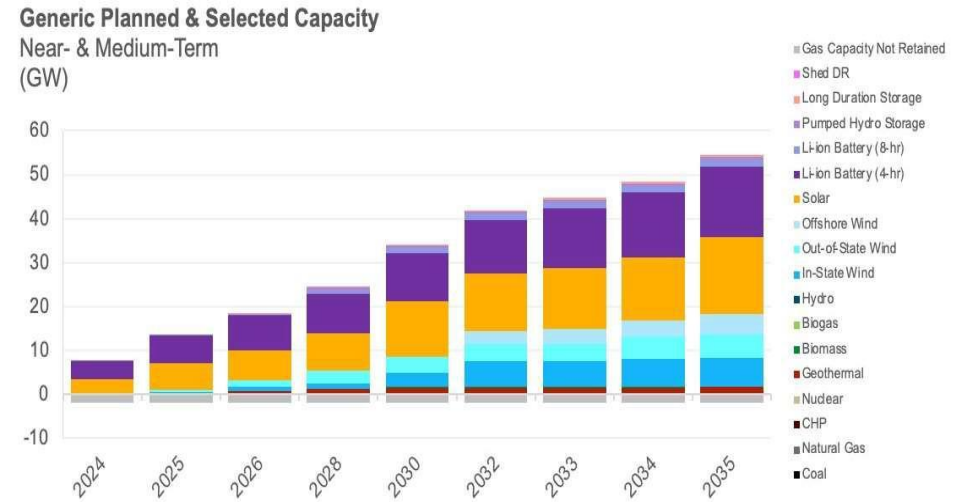
California Public
Utilities Commission

Planned & Selected Capacity

- Over the last five years, the composition of the IRP Preferred System Plan (PSP) has evolved, particularly as it relates to storage.



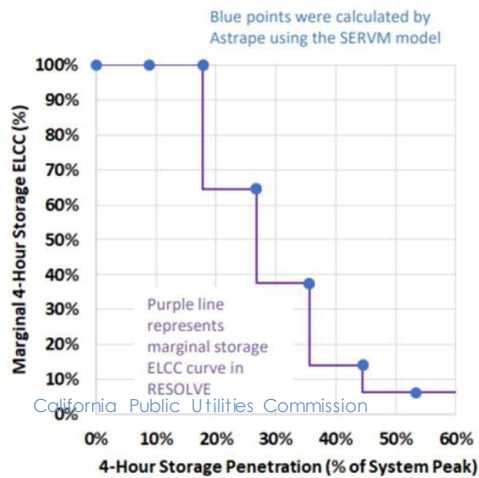
2018 Preferred System Plan



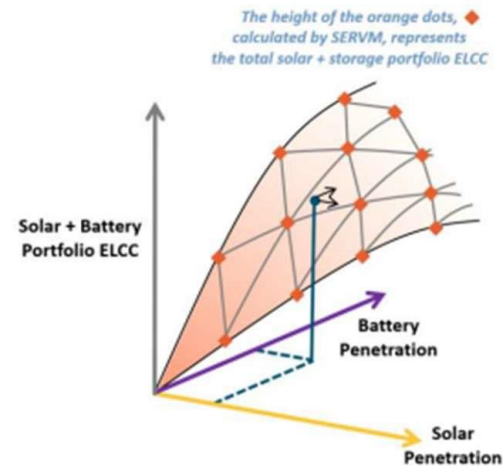
Proposed 2023 Preferred System Plan (25 MMT Core Case)

Evolution of IRP's Characterization of Storage Reliability Contribution: 4-hr battery example

- 2017-18 IRP cycle included no 4-hr storage ELCC curve
- 2019-21 IRP cycle included our first 4-hr storage ELCC curve
- 2022-23 IRP includes a multi-dimensional ELCC surface for 4-hr battery storage
 - Moved from solar + wind surface to solar + 4-hr battery storage surface

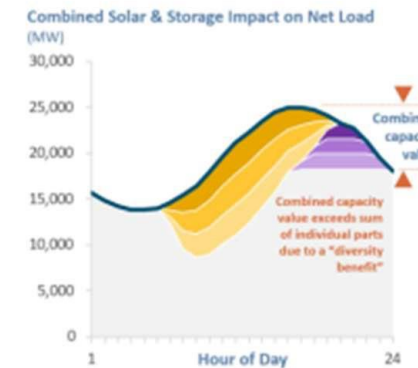


2019-21 IRP cycle



2022-23 IRP cycle

A portfolio of resources exhibit complex interactive effects, where the whole may exceed the sum of its parts



Long-Duration and Super Long-Duration Storage in IRP

- Planning Track:
 - Latest updates on storage products included in modeling and related functionality improvements.
- Procurement Track:
 - Not surprisingly, per latest MTR ELCCs, 8-hr and 12-hr products have higher value (~88 – 93%) than 4-hr ones (~76%) in 2028. More integration with Planning Track and/or more study required for additional years, technologies, etc.

New IRP Procurement Program (RCPPP)

- Staff Options paper released in September '22
- Staff Proposal expected before end of year
- Major considerations in play:
 - Marginal vs. average ELCC for resource accreditation
 - Inclusion of only new resources vs. new + existing
 - List of eligible resources – how far to go beyond RPS to go in GHG-free category