



Briefing on 2023 Summer Loads and Resources Assessment results

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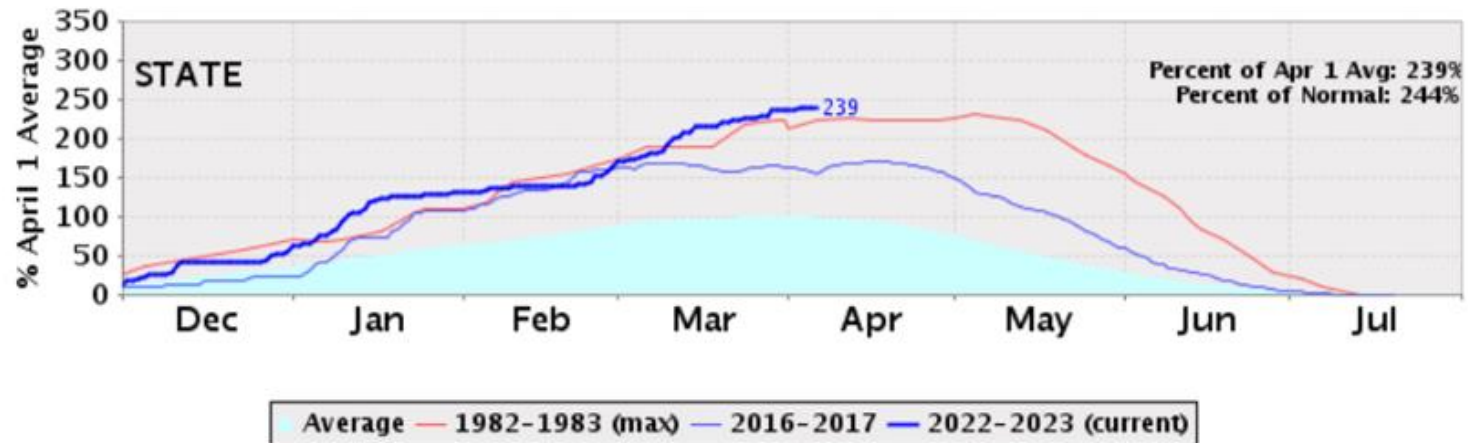
ISO Board of Governors meeting
General Session
May 18, 2023

The ISO is showing considerable improvement in the resource situation driven off of new resources and high hydro conditions

- New resource development is continuing through the summer:

Resource Type	Incremental Installed Capacity Between Sept 1 2022 and <u>June 1, 2023</u>	Incremental Installed Capacity Between Sept 1 2022 and <u>Sept 1, 2023</u>
Wind	518	518
Solar	2,478	3,774
Battery Storage	2,293	4,302

- Hydro conditions are tracking to record highs:



Statewide Percent of average to date

244.0%



The improved resource situation more than offset modest increases in CEC load forecasts

CEDU 2022 Planning Forecast for ISO Balancing Authority Area

	Forecast for 2023	Last year's forecast for 2022
1-in-2 forecast	46.8 GW	46.3 GW
1-in-5 forecast	48.8 GW	48.3 GW
1-in-10 forecast	49.9 GW	49.4 GW

In 2022, while the actual peak demand reached 52,061 MW in 2022 – a 1-25 year event (weighted 3-day temperature using 28 years of weather data).

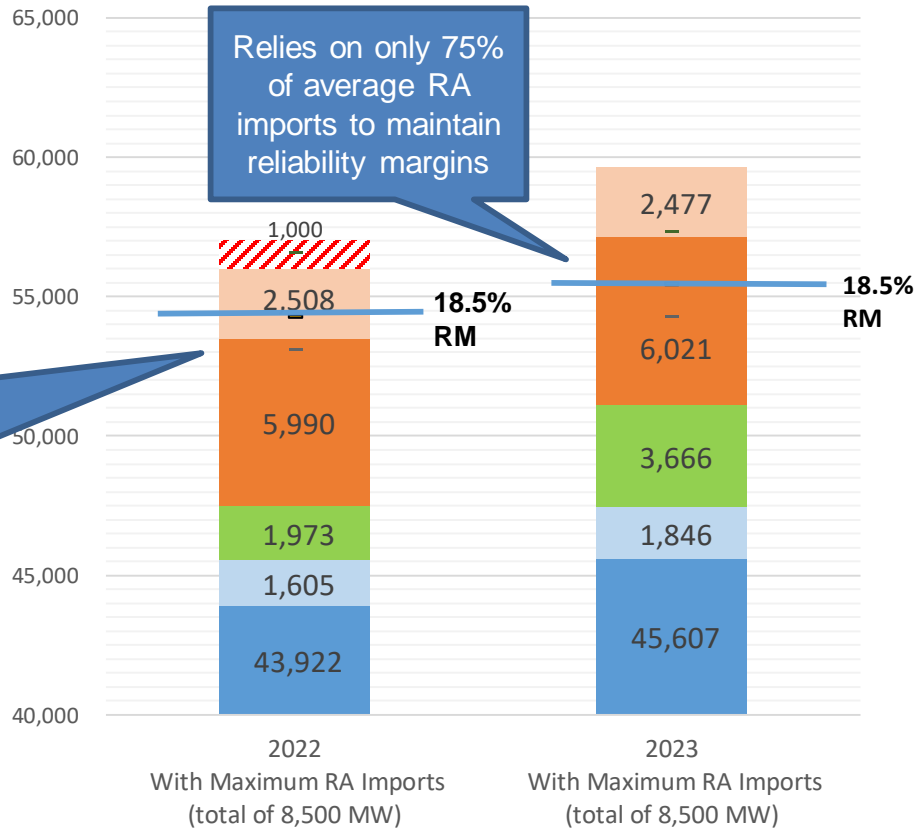
Overall, the ISO balancing authority area is expected to achieve the reliability planning target of 1-in-10 LOLE

Progress to achieving a 1-in-10 reliability planning target	Resources scheduled online by June 1	Resources scheduled online by September 1
With current high hydro conditions	~ 200 MW Surplus	~ 2300 MW Surplus
With average hydro conditions	~ 1100 MW Shortfall	~ 960 MW Surplus

There was an estimated **1,700 MW capacity shortfall** in 2022 to meet the planning target

Peak load analysis also shows a significant improvement over 2022 in meeting operating reserves at peak load

September 2022 and 2023 base case and sensitivities at 8 pm on peak day (MW) – No Solar



- Economic imports above maximum RA contracts
- Maximum level import RA contracts
- Average level import RA contracts
- New Resources since January 1
- Existing DR resources
- Existing non-DR resources as of January 1

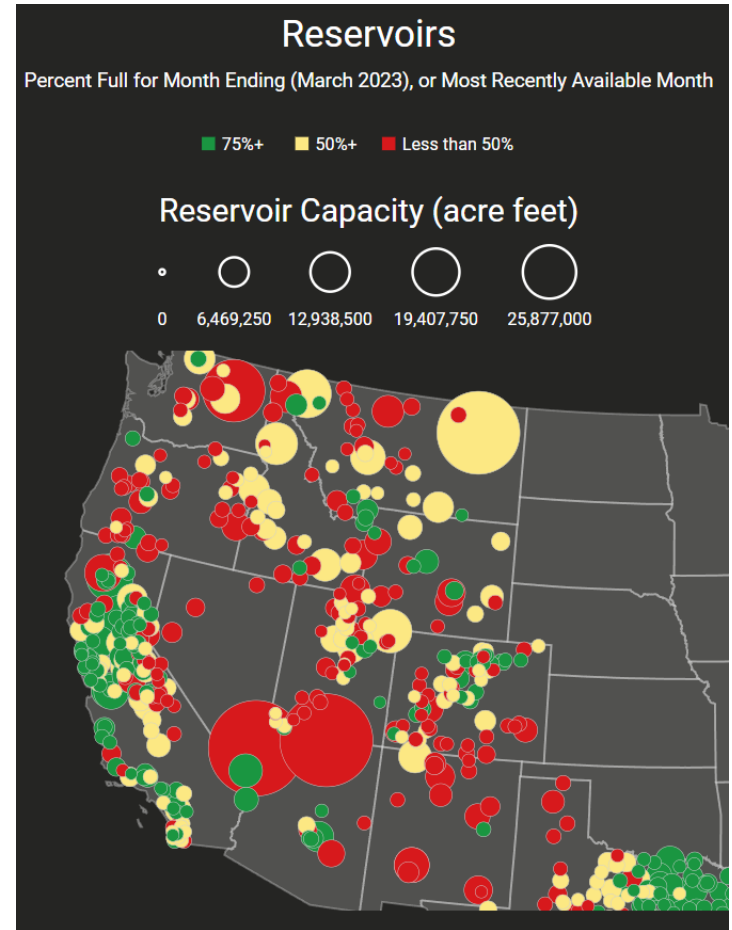
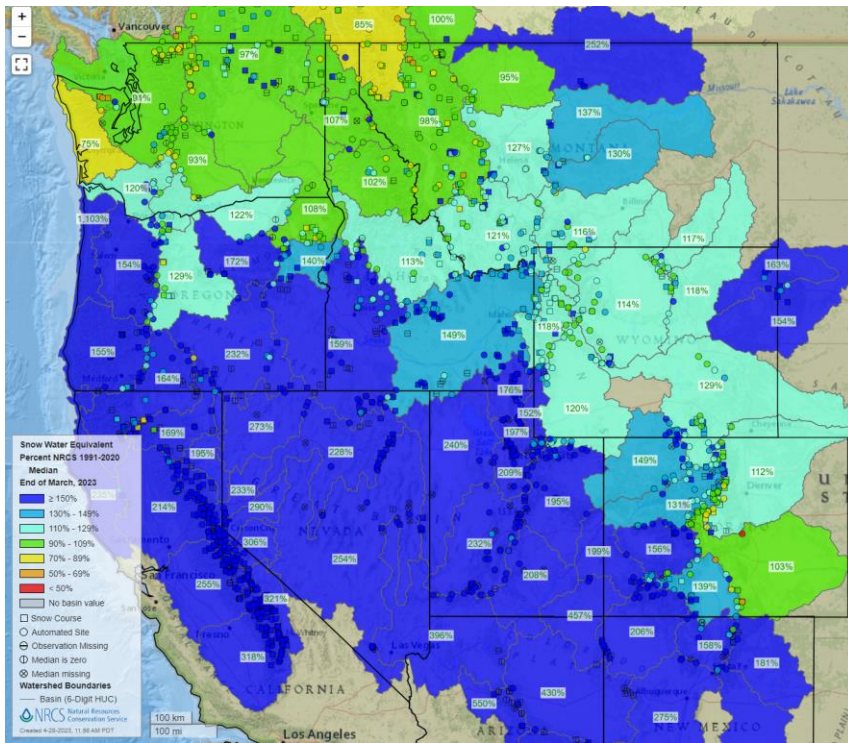
Relies on above average RA imports to maintain reliability margins

Relies on only 75% of average RA imports to maintain reliability margins

An 18.5% reserve margin is needed to meet reserve requirements and allowances for forced outages and to accommodate a 1-in-5 load level.

Above normal snow pack to help improve reservoir conditions

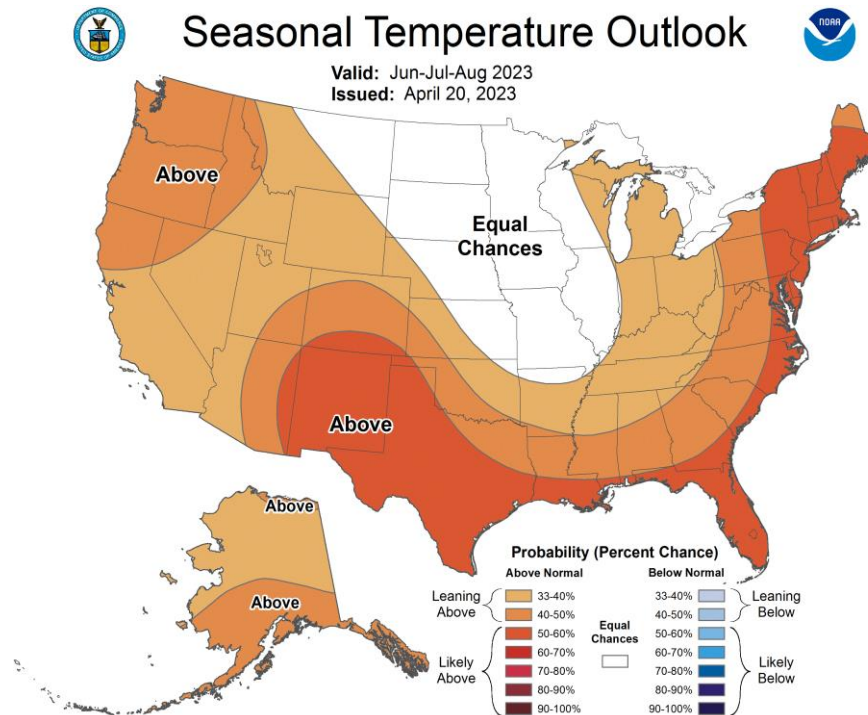
Snow Water Equivalent Percent As of end of March 2023



Western Weather Outlook - Temperature

June 2023 – August 2023

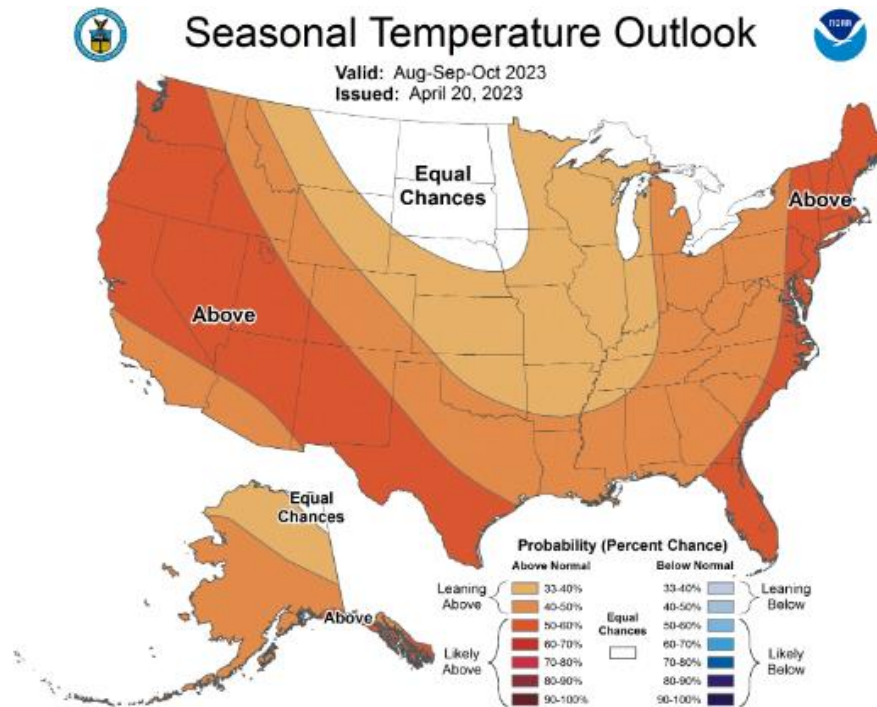
- Warmer than normal average temperatures are forecast for California and the Pacific Northwest
- Expecting milder conditions along the coastal regions in June and July due to cool Sea Surface Temperatures off the coast



Western Weather Outlook - Temperature

September 2023 – October 2023

- The chances of above normal temperatures for far western United States increases in August or September due to warming sea surface temperatures



Key observations:

- Overall 2023 conditions have improved significantly due to:
 - Addition of over 3,000 MW storage supply
 - Beneficial hydro conditions
- Grid remains vulnerable to high loads and availability of imports during widespread heat events, especially in late summer
- Hours of most vulnerability are declining and continue to shift to hours after sunset
- Strategic reserves have been mobilized through state efforts to safeguard against these extremes