

Chart of the Week #2022-20

California Summer Hydroelectric Power Shortfall is Projected



Max Pyziur
June 8, 2022
Washington, DC

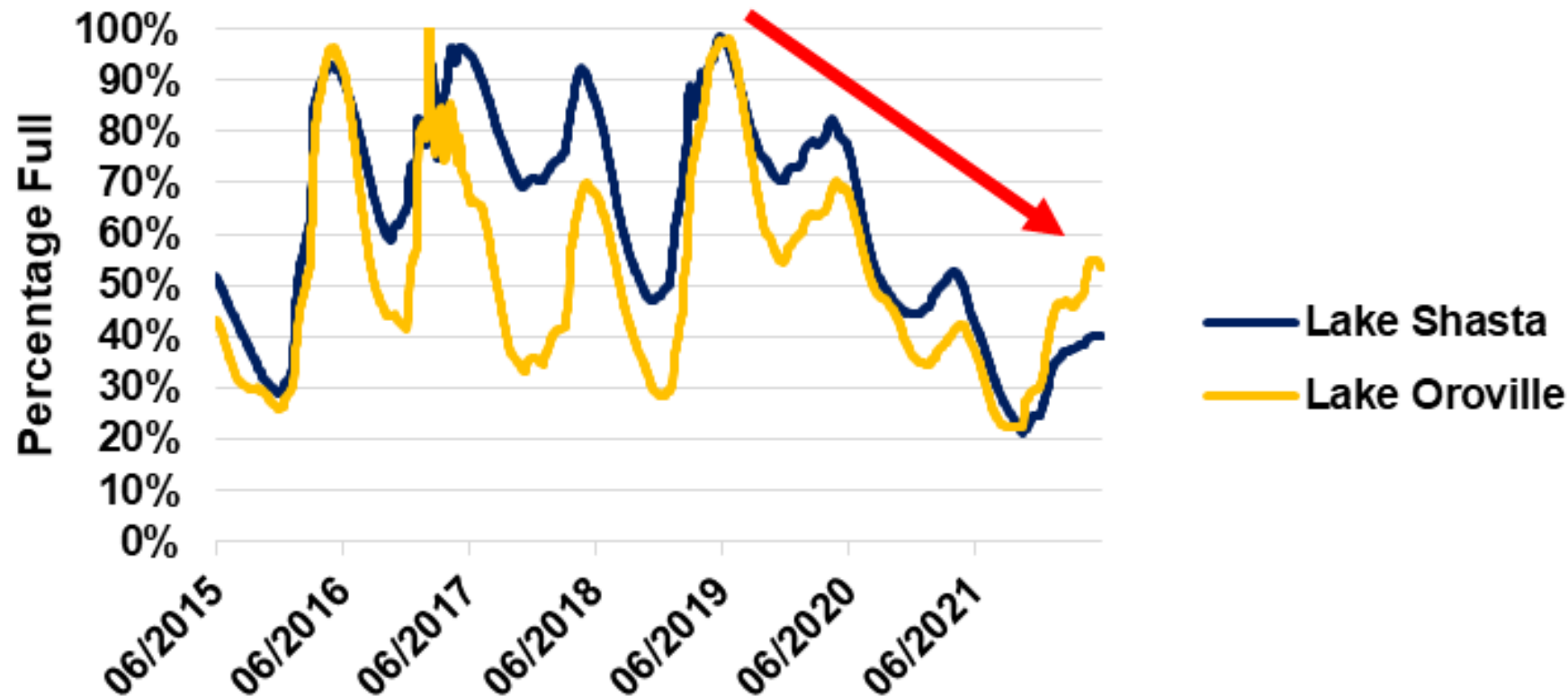


Water Levels at California's Main Hydroelectric Reservoirs



Storage Levels at California's Two Largest Hydroelectric Reservoirs

06/08/2015 - 06/06/2022



Analysis Based on California Dept. of Water Data

EPRINC

Because of drought during the last two years, water levels at California's hydroelectric reservoirs are at pre-summer peaks that are much lower than normal. Because of this California's 2022 summer electricity generation will need to rely on other energy sources, notably natural gas.

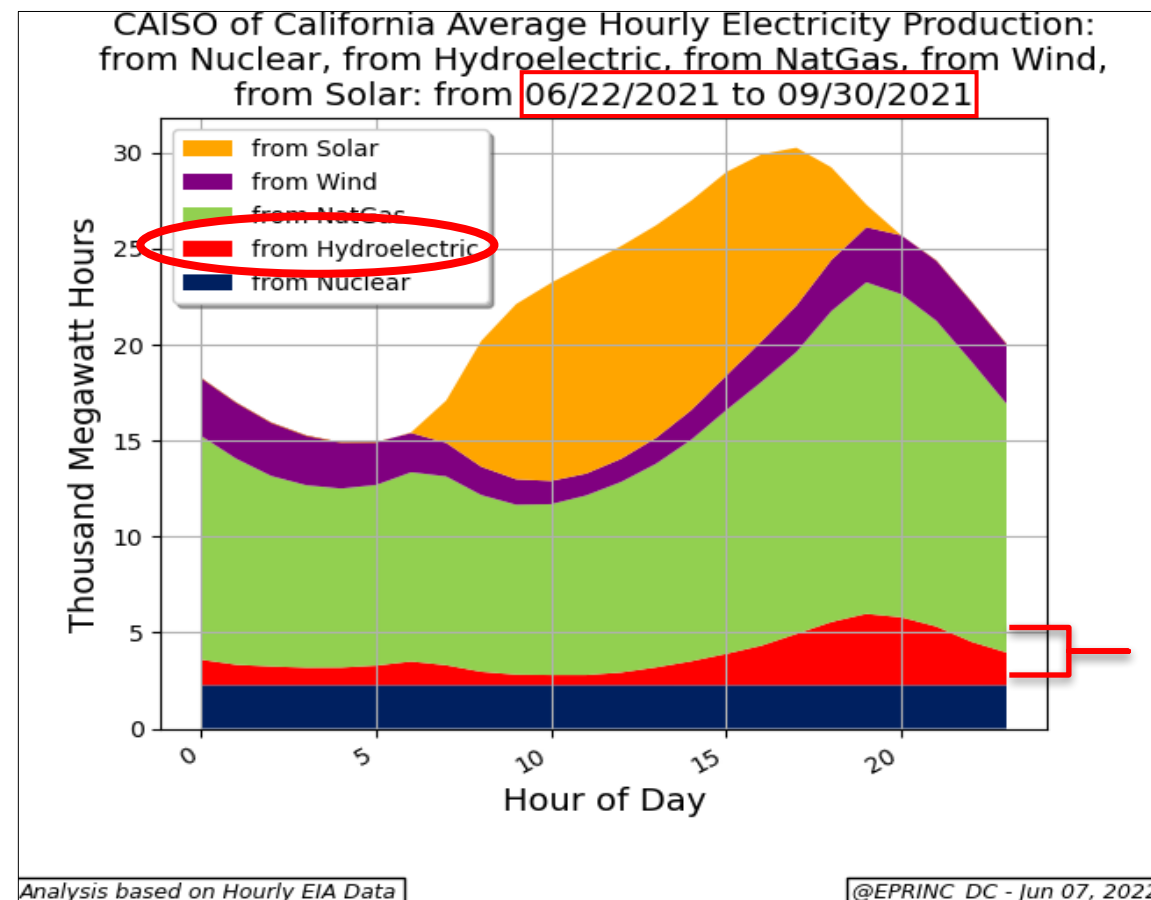
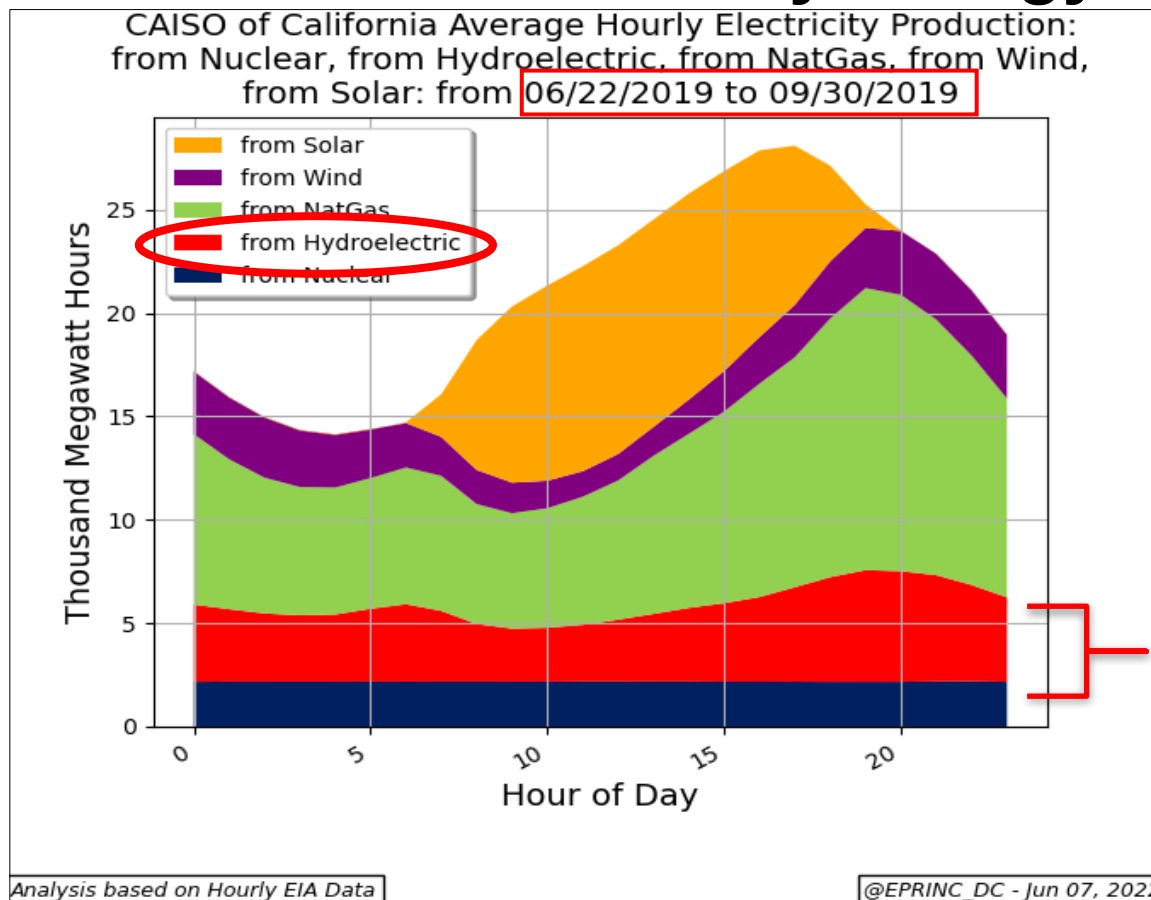
California Summer Power Generation Percentage by Fuel Source 2018-2021

	<u>Nuclear</u>	<u>Natural Gas</u>	<u>Hydro</u>	<u>Geo</u>	<u>Wind</u>	<u>Solar</u>
2018	8.1%	44.2%	13.9%	4.9%	7.8%	20.9%
2019	7.8%	38.6%	19.7%	4.9%	6.0%	23.0%
2020	7.6%	45.5%	11.9%	5.0%	5.4%	24.5%
2021	7.9%	48.1%	7.7%	4.7%	5.7%	25.8%

Analysis based on EIA Data

EPRINC

California Summer Intraday Power Generation by Energy Source



During the summer of 2019, California received about 19% of its electricity from hydropower.

During the summer of 2020, this dropped to 11% because of the state's drought.

California's Reliance on Hydroelectric Power



- California has 10,000 Megawatts of installed hydroelectric capacity. Its utilization is highly dependent on water levels at California's reservoirs critical for summer peak generation.
- On most summer days, California utilizes about half of this capacity. During normal summer conditions, about 15% of California's electricity is generated from these sources.
- Ahead of the 2022 summer and beginning two years ago, California has been experiencing a severe drought; this has caused water levels across all California's hydroelectric reservoirs to drop considerably.
- Lake Shasta and Lake Oroville, California's two largest hydroelectric reservoirs, are currently at 40% and 54% of their capacity, respectively, rather than 90% under normal circumstances.
- To make up for the shortfall, California is expected to increase its reliance on electricity from natural gas generation, rising from an average of 45% of total to over 50%.
- This slide deck is available on the [EPRINC Website](#)
- For more information on this chart, please contact Max Pyziur (maxp@eprinc.org).