

ORANGE COUNTY REGISTER

Focus: California's energy and water are in short supply

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California needs energy and water equally, and residents are being asked to cut back on both. The state is leading the nation in setting goals for increasing production of renewable-energy sources but has relied on natural gas for the bulk of its energy production.

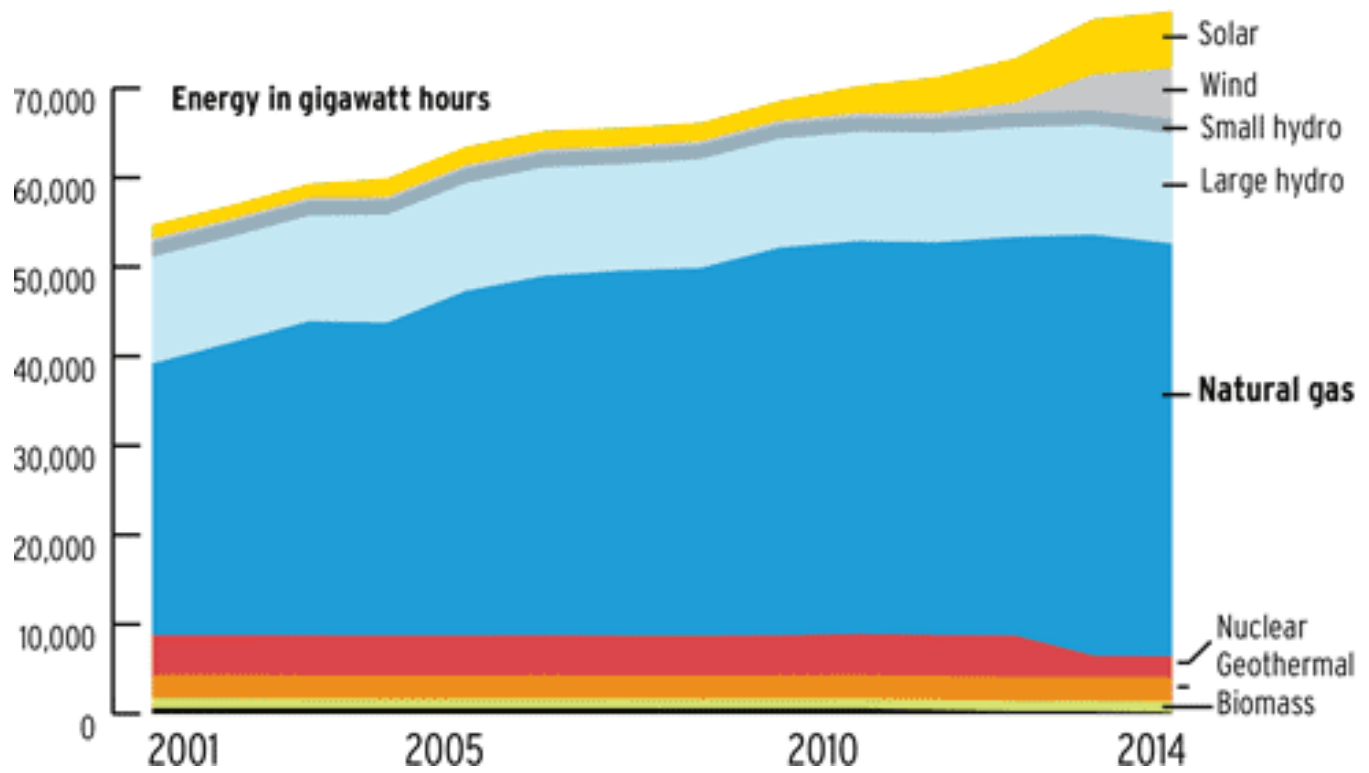


Image from Southern California Edison's outage map during a blackout in September 2015.

HUGE RELIANCE

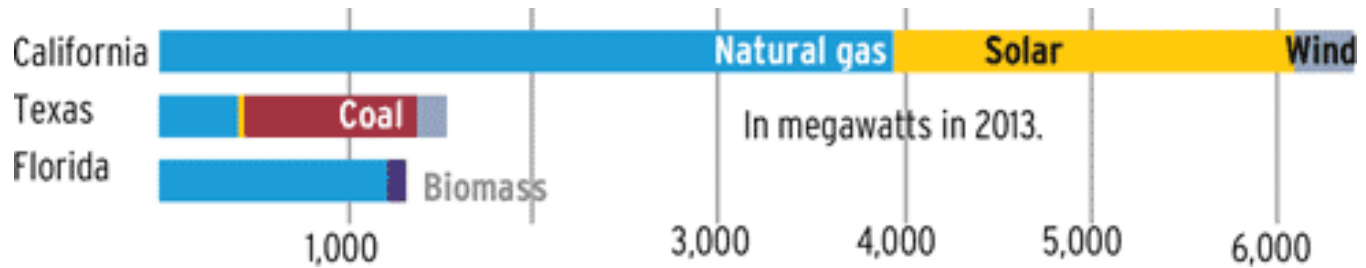
California electric generation by fuel

Natural gas provides the most energy of any source for Californians. It provides nearly 60 percent of all the electricity in the state and even more for Southern Californians.



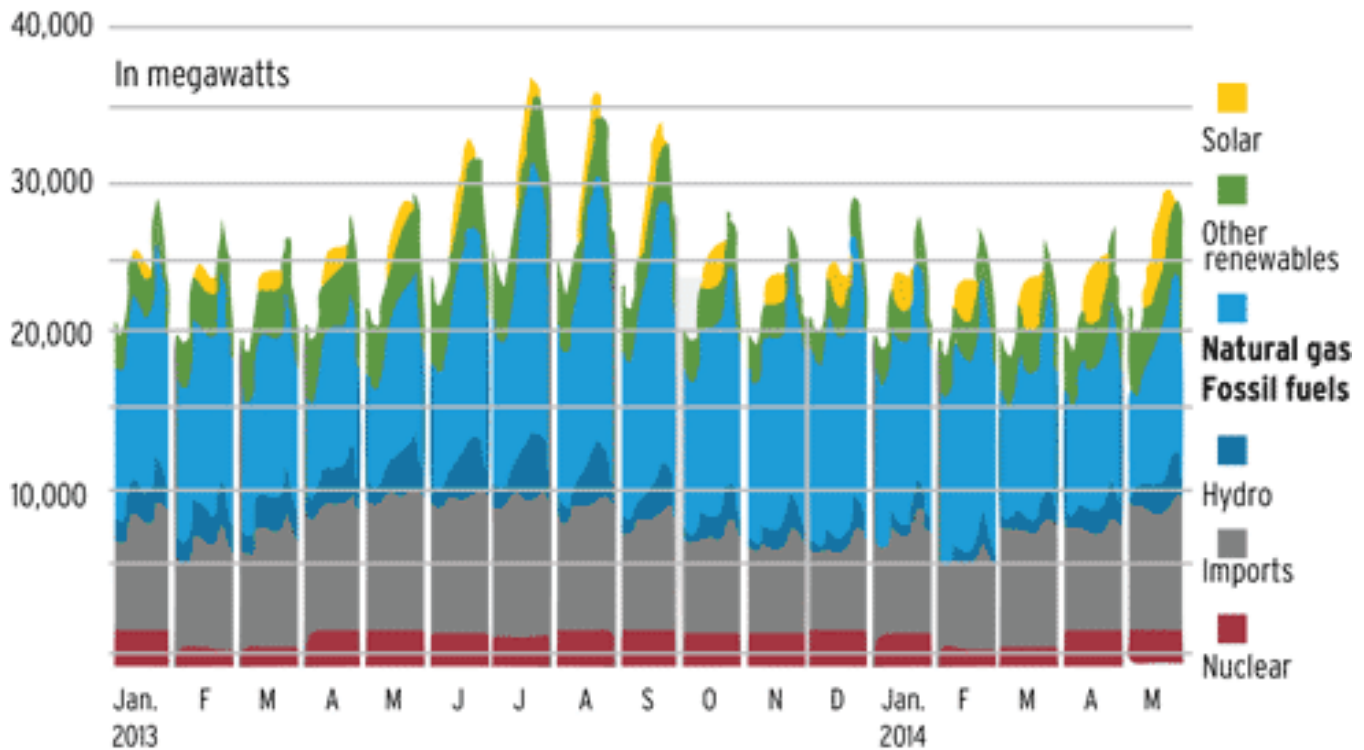
Top power plant capacity additions in the U.S.

California has developed more natural gas and solar plants than any other state in recent years.



PEAKING POINTS

California's electricity imports and production are balanced based on need and production. The need for natural gas during the summer and fall is higher than in winter months.

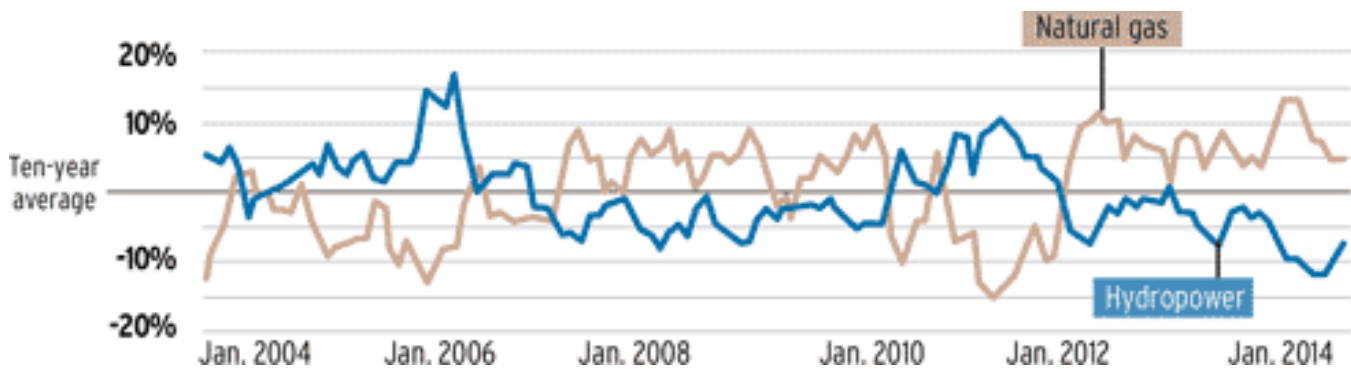


DOUBLE DROUGHTS

California's drought has resulted in a significant decline in hydropower generation. On average, hydropower accounted for 20 percent of California's generation during the first six months of each year from 2004 to 2013. During the first half of 2014, hydropower accounted for 10 percent. The recent snowpack in the Sierra Nevada is expected to improve hydropower production this spring.

Needing more gas during the drought years

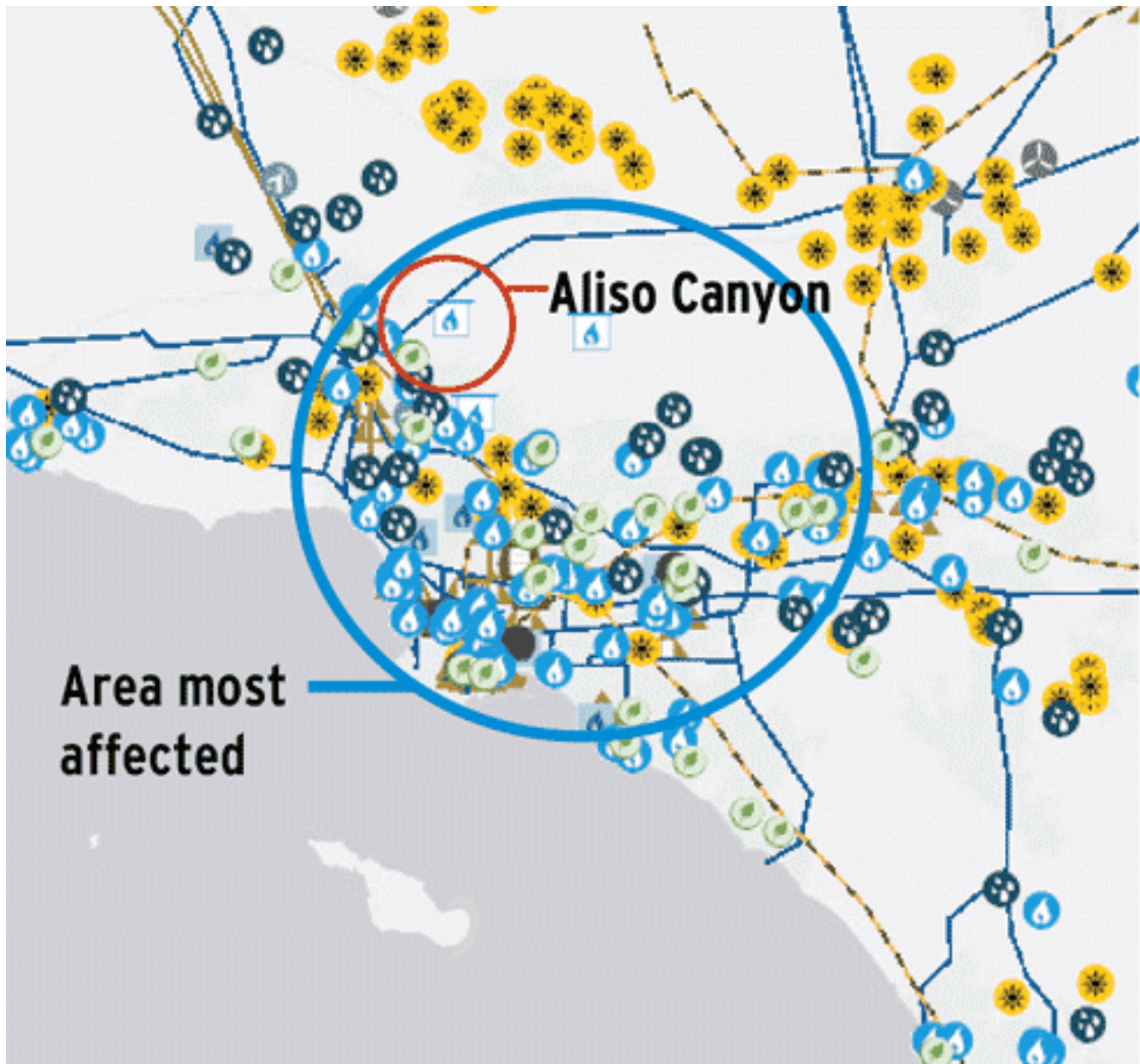
Percent difference from 10-year average



LACK OF STORAGE

The Aliso Canyon gas storage facility is an important contributor to Southern California's electric grid. Gas storage acts like a shock absorber when variations in the electric grid are in great demand. In summer and winter, Aliso Canyon's gas storage supports electric reliability. But until the facility is allowed to refill, residents relying on its fuel for power on peak days will have higher blackout risks.

Power plants







The Aliso Canyon natural gas leak began in October and was sealed Feb. 18. The storage facility supplies gas for 5 million people, who may have 14 to 33 days of interrupted service this summer and fall.

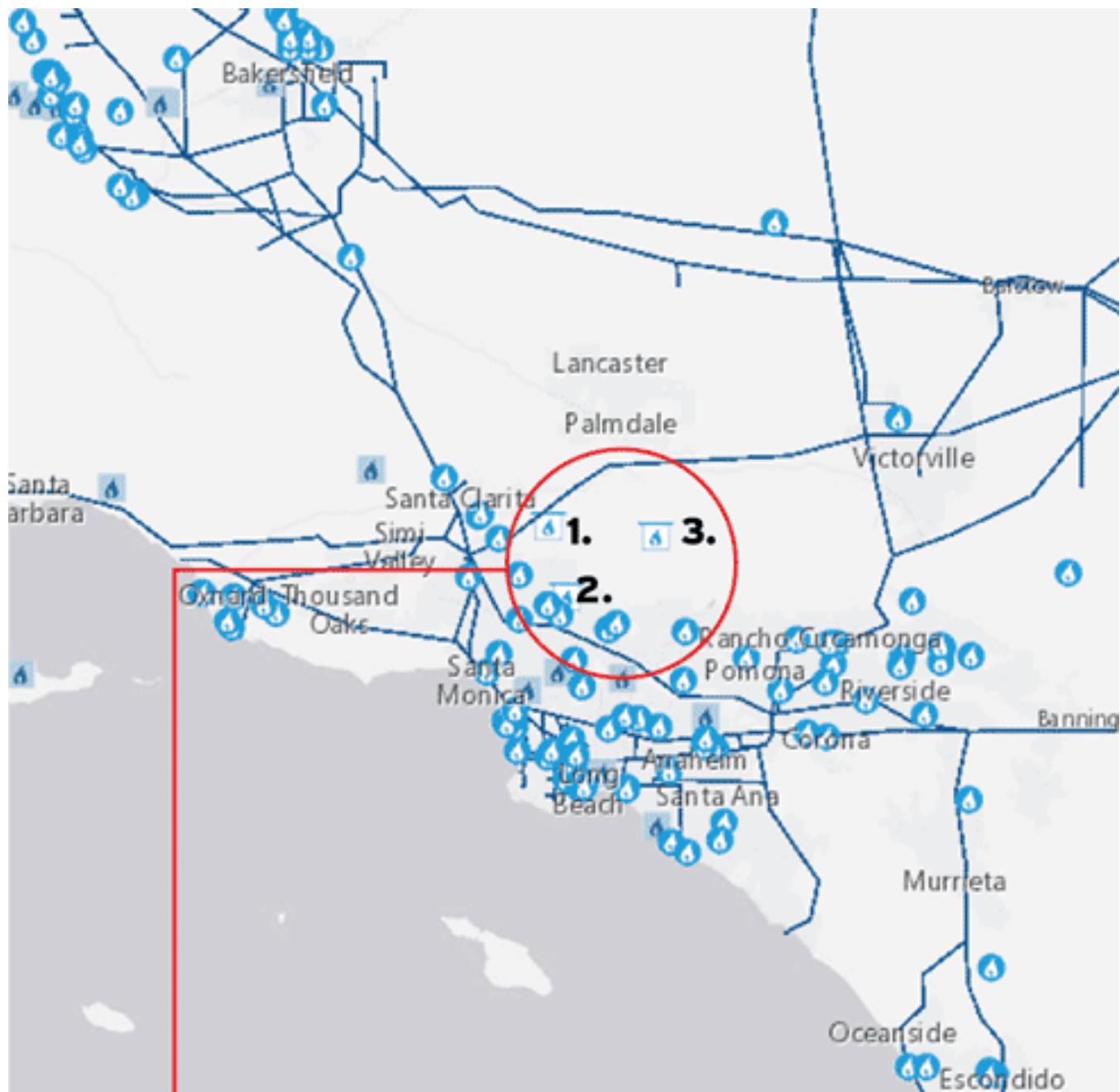
The Aliso Canyon facility receives gas from as far away as Canada through a network of supply lines. SoCalGas has lost as much as 64 percent of the storage capacity until all the wells at the site pass inspection. It's unclear when that will occur. The storage facility supplies 17 gas power stations in heavily

populated areas of Los Angeles and Orange counties.

Alternate electricity supplies in Orange and Riverside counties are limited in how much electricity they can move through the grid on peak days and will not be able to compensate for the lack of gas from Aliso Canyon.

Southern California's natural gas grid

-  Natural gas processing plant
-  Natural gas underground storage
-  Natural gas power plant
-  Natural gas intra/interstate pipeline



Urban Southern California areas rely on natural gas plants more than any other type of power plant.

Local underground storage areas

The Aliso Canyon storage facility is the largest of 14 underground storage facilities in the state. It is three times larger than the two other facilities in the region.

Ranking

California ranks 15th in the nation for natural gas production.

Storage facility capacity In millions of Mcf

1. Aliso Canyon



2. Honor Rancho



3. Playa Del Rey



One Mcf is equal to 1,000 cubic feet of gas.

Sources: SoCalGas, U.S. Energy Information Administration, Southern California Edison

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