



The California Energy Commission's (CEC) Energy Insights analysis provides a snapshot of trends in the energy sector, including impacts to energy supply and demand to the following sectors since Governor Gavin Newsom announced California's stay-at-home order on March 19, 2020.

- [Electricity Sector](#)
- [Natural Gas Sector](#)
- [Transportation Fuels Sector](#)

Key Highlights

As summer peaks, demand for air conditioning and space cooling is up, offsetting decreases in other loads during peak hours.

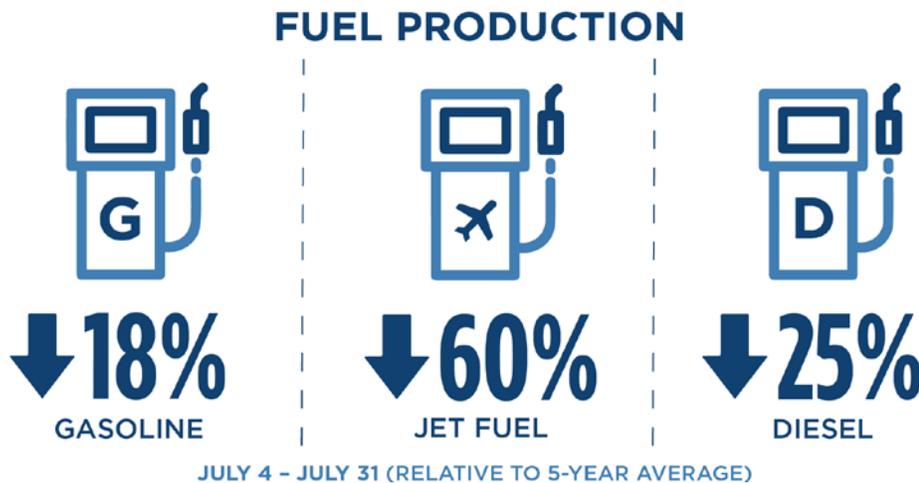


Industrial and large commercial natural gas demand returned closest to 2019 levels since early April.

PG&E INDUSTRIAL NATURAL GAS DEMAND



Gasoline demand continues to recover, while diesel demand continues to fall, and jet fuel demand remains at historic lows.



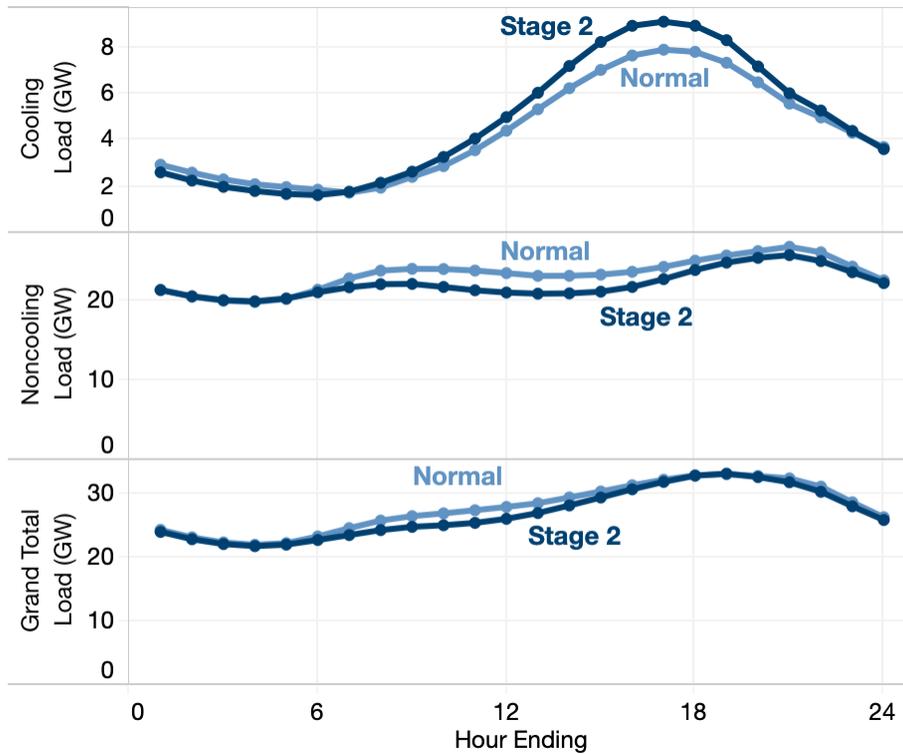
In-Depth Analysis

Electricity

As summer peaks, demand for air conditioning and space cooling is up, offsetting decreases in other loads during peak hours. Weekday demand for cooling – air conditioning and related uses – is up 9 percent during Stage 2 of California’s stay-at-home order compared to the corresponding period of 2019, as Californians stay home during the summer heat. In contrast, noncooling demand is down 5 percent as other economic activity remains scaled back. The profiles of cooling and noncooling loads are different, so understanding how each is changing independently is key to understanding how overall summer electricity use is changing under the stay-at-home order.

Figure 1 (top) shows the estimated cooling load surging during the afternoon and evening for the average daily composite temperature (71.5°F) during Stage 2 of the stay-at-home order relative to normal conditions. In contrast, noncooling consumption is down across all waking hours (middle). Under these conditions, overall consumption drops about 3 percent (19 gigawatt-hours [GWh]), but peak load remains within half a percentage point of the normal expected level (bottom). On the hottest weekday of Stage 2 so far (79°F), cooling loads are expected to pull peak loads about 3.9 percent (1.7 GW) above normal levels, even as total electricity consumption is down 1 percent (8.8 GWh).

Figure 1: California ISO Predicted Hourly Weekday Demand for 71.5°F Composite Average Temperature Day



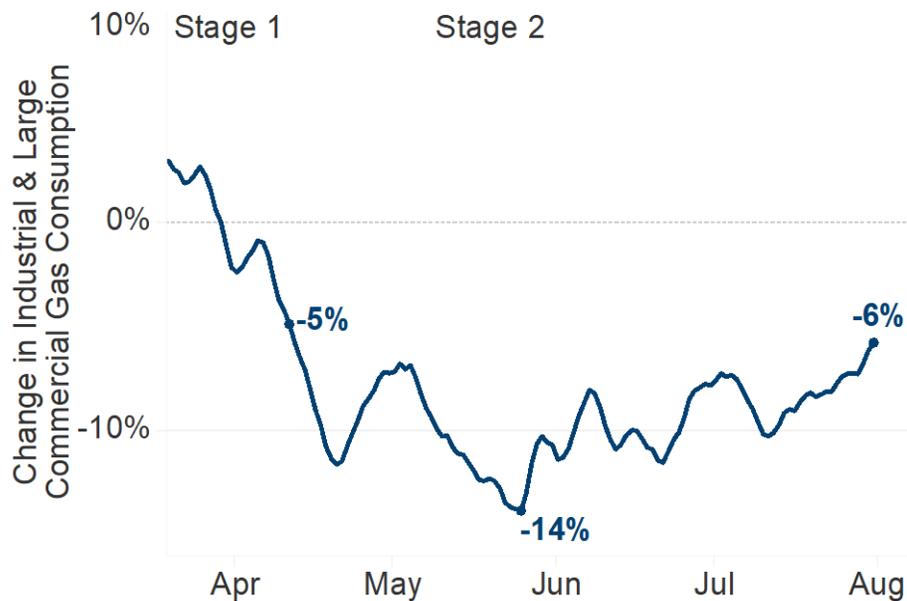
Source: California Independent System Operator (California ISO) Open Access Same-time Information System (OASIS). A linear regression model of electricity load as a function of cooling degree days (CDD, defined as degrees above 65°F) is run for each hour of the day for Stage 2 of the stay-at-home order and the corresponding period in 2019. Temperatures used to compute CDD are composite weighted averages of California weather station daily average air temperatures. “Cooling loads” are defined as electric demand attributable to an increase in CDD, which may include some loads that are not strictly space cooling, such as refrigeration.

Natural Gas

Industrial and large commercial natural gas demand returned closest to 2019 levels since early April. Pacific Gas and Electric Company (PG&E) industrial and large commercial demand dropped below 2019 levels on April 6, and the weekly average has remained below ever since. Over the last two weeks of July, however, consumption returned to just 6 percent below 2019 levels. Figure 2 shows the year-over-year percentage change in the two-week rolling average of industrial and large commercial gas consumption.

Following a gradual rebound since May, the reduction is now smaller than at any time since the first weeks of April, when industrial customers were just beginning to cut back or shut down operations. While the consumption appears to be returning quickly to 2019 levels, the pattern across previous months shows significant fluctuations, which are likely to continue before leveling out.

Figure 2: PG&E Industrial and Large Commercial Natural Gas Demand, Percentage Change in Two-Week Rolling Average, March 19–July 31, 2020, and Corresponding Period for 2019



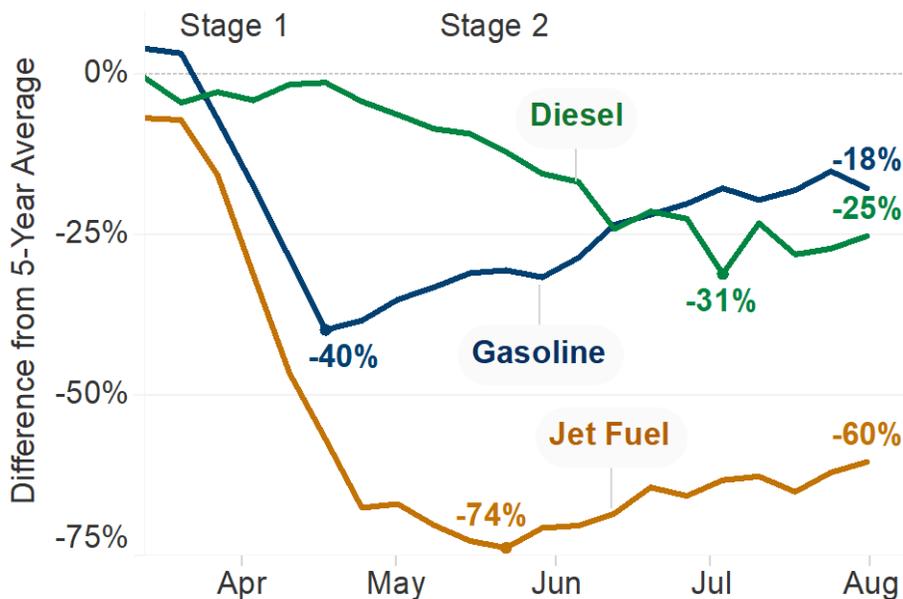
Source: PG&E Pipe Ranger. Dates in 2020 have been matched with the corresponding week and weekday in 2019 to account for weekly patterns in demand. The two-week rolling average smooths otherwise volatile year-over-year differences.

Transportation Fuels

Gasoline demand continues to recover, while diesel demand continues to fall, and jet fuel demand remains at historic lows. The four-week average net production (production minus changes in inventory, an indirect indicator of demand) of gasoline rose to just 18 percent below the five-year average, steadily rising from 40 percent below in the month immediately following the stay-at-home order. In contrast, diesel net production fell to 25 percent below the historical average from just 1 percent below during the same period. Demand for air travel was impacted the most, with net production dropping to 74 percent below historical levels in May and recovering only slightly to 60 percent below.

One California refinery announced a permanent closure on July 31, while others remain at varying degrees of reduced operating levels.

Figure 3: California Refinery Gasoline, Diesel, and Jet Fuel Production, Percentage Difference in Four-Week Moving Average from Five-Year Historical Average

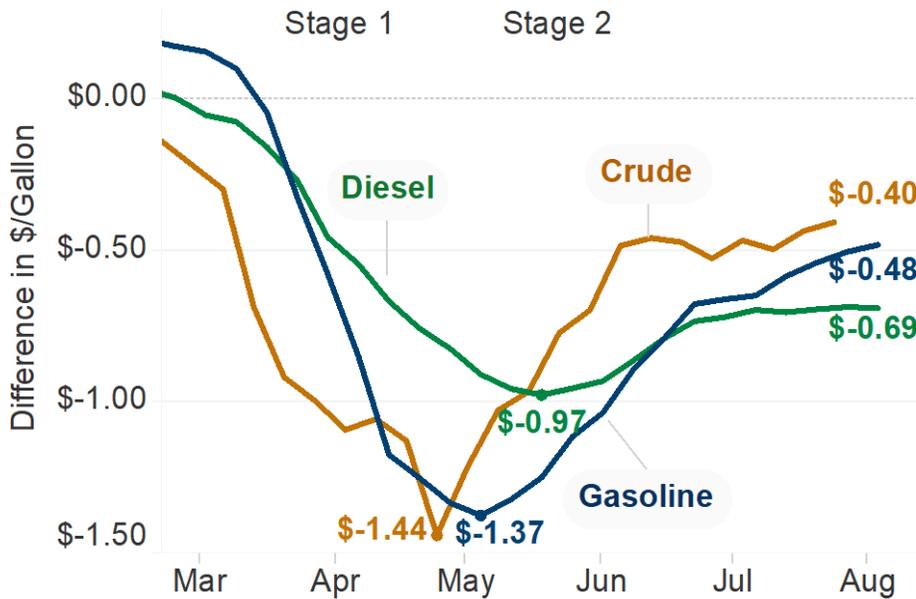


Source: CEC Fuels Watch. "Net production" is the weekly fuel production minus the change in inventory from the previous week to account for deliveries of fuel not produced in that week. Weekly production for 2020 is compared to the 2015–2019 average net production for the same week to account for seasonal and random variation in weekly production and changes in inventory.

Reduced demand for transportation since the stay-at-home order contributed to depressed gasoline and diesel prices, mirroring net production. The decline in demand and ensuing price war between major oil-producing countries (which predated California’s stay-at-home order) led to decreases in prices of crude oil and refined fuels, as shown in Figure 4. Crude oil dropped earliest, reaching a maximum year-over-year decrease of \$1.44 per gallon in April before bouncing back to around \$0.40 below in recent weeks.

Refined fuel prices respond both to crude oil prices and changes in demand for the specific fuel. Following the price of crude, diesel prices dropped to nearly a dollar per gallon below 2019 prices. Gasoline prices fell further, to a minimum of \$1.37 below around the beginning of May because of decrease in demand for personal vehicle travel. On April 3, California’s average retail price for regular grade gasoline dropped below \$3 per gallon for the first time since August 2017. However, the price of gasoline has rebounded more than the price of diesel relative to last year as demand for personal vehicle travel picked up in Stage 2 of the stay-at-home order.

Figure 4: Difference in Fuel Prices From 2019



Source: Energy Information Administration, Weekly Retail Gasoline and Diesel Prices, California. Prices are shown as differences from prices during the same week of 2019 to account for seasonal variations in fuel prices. Crude oil price is shown as the average of Brent and West Texas Intermediate Crude.

Contact

For more information, contact the CEC's Media and Public Communications Office at mediaoffice@energy.ca.gov or (916) 654-4989.



Governor
Gavin Newsom

Chair
David Hochschild

Vice Chair
Janea A. Scott, J.D.

Commissioners
Karen Douglas, J.D.
J. Andrew McAllister, Ph.D.
Patricia Monahan

Executive Director
Drew Bohan

AUGUST 2020

