

PETROLEUM WATCH

CALIFORNIA ENERGY COMMISSION

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REFINERY NEWS

Chevron El Segundo:

On November 8, a fire broke out at the refinery. No injuries were reported according to [Reuters](#).

PBF Martinez:

On November 24, a mechanical problem with the catalyst cracking unit led to spent catalyst (silicon dioxide, aluminum oxide, calcined kaolin) being released into the atmosphere. Some of the material settled on the community of Martinez, as reported by [California Governor's Office of Emergency Services](#) and [ABC 7](#).

CALIFORNIA GASOLINE RETAIL PRICES BY BRAND

November 2022 vs. 2021

(Percentage Change)

76	13% higher
ARCO	14% higher
Chevron	14% higher
Hypermart	10% higher
Shell	14% higher
Unbranded	13% higher
Valero	13% higher

November 2022 Averages

76	\$5.33
ARCO	\$5.12
Chevron	\$5.54
Hypermart	\$4.77
Shell	\$5.49
Unbranded	\$5.11
Valero	\$5.27



Source: California Energy Commission (CEC) analysis of Oil Price Information Service (OPIS) data

CALIFORNIA DIESEL RETAIL PRICES BY REGION

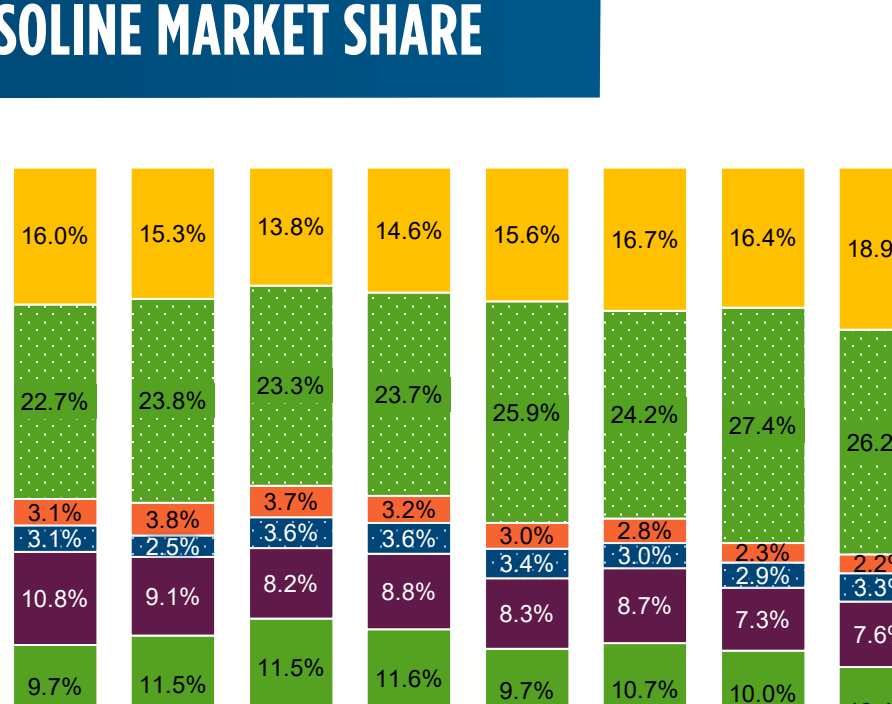
November 2022 vs. 2021

(Percentage Change)

Northern CA	26% higher
Central CA	30% higher
Southern CA	30% higher

November 2022 Averages

Northern CA	\$6.16
Central CA	\$6.12
Southern CA	\$6.13



Source: CEC analysis of OPIS data

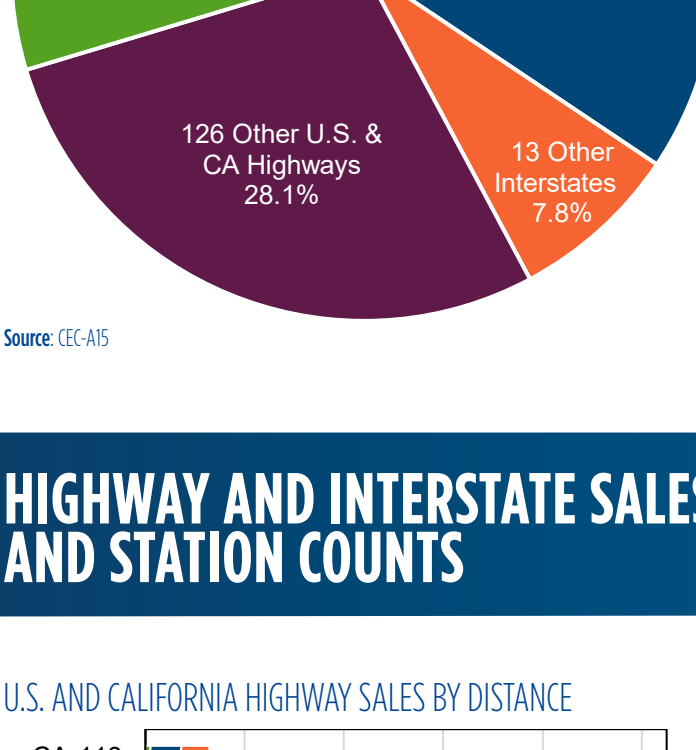
CALIFORNIA RETAIL GASOLINE MARKET SHARE



Source: California Retail Fuel Outlet Annual Reporting (CEC-A15)

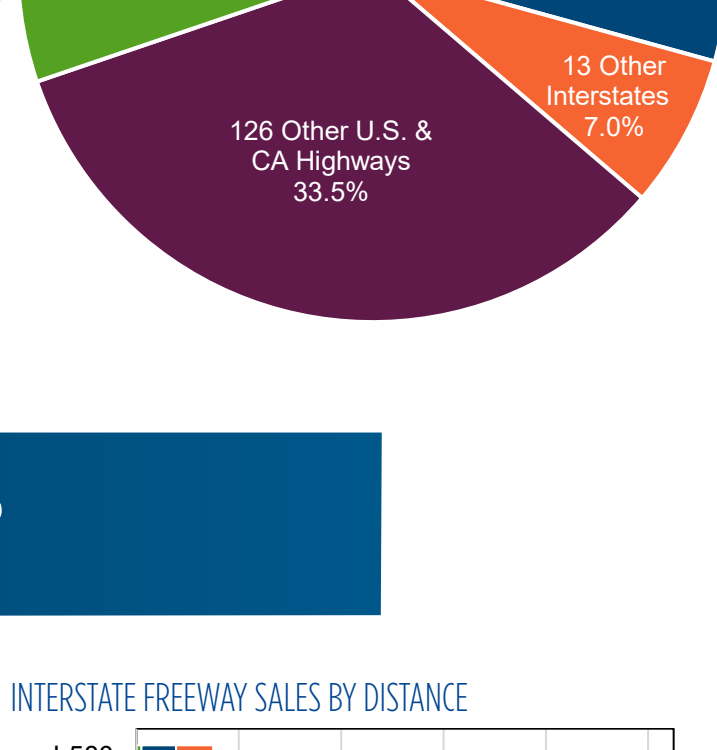
2021 CALIFORNIA TOTAL GASOLINE SALES

TOP LOCATIONS BY SALES



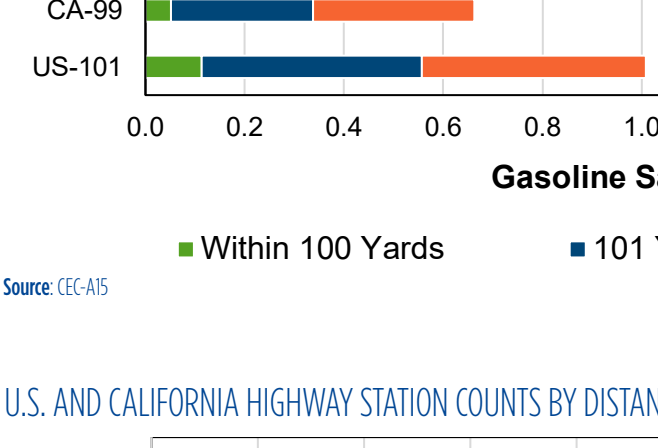
Source: CEC-A15

TOP LOCATIONS BY STATION COUNTS



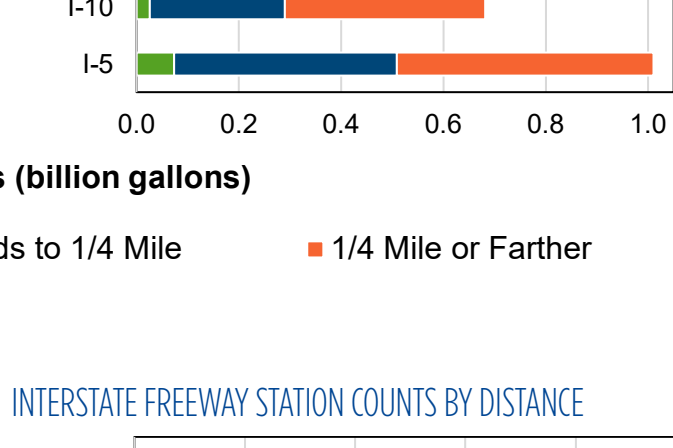
HIGHWAY AND INTERSTATE SALES AND STATION COUNTS

U.S. AND CALIFORNIA HIGHWAY SALES BY DISTANCE



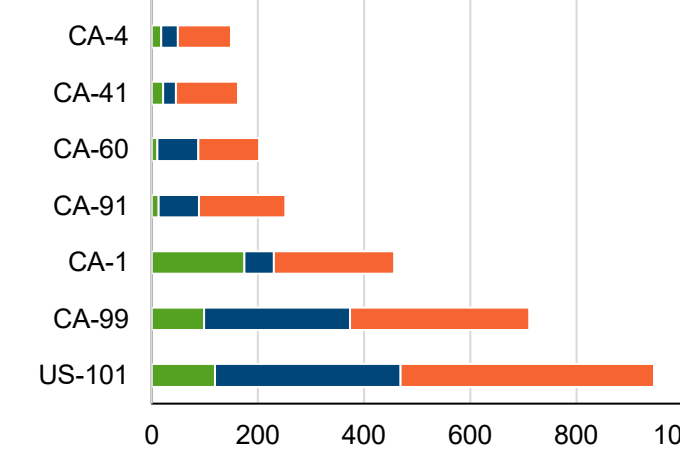
Source: CEC-A15

INTERSTATE FREEWAY SALES BY DISTANCE



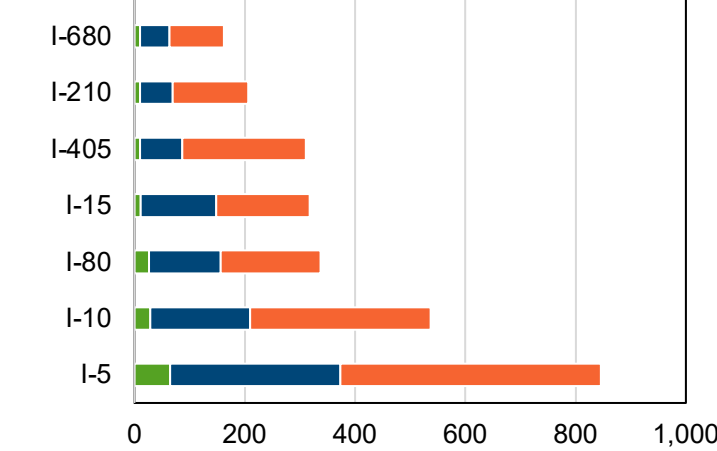
Source: CEC-A15

U.S. AND CALIFORNIA HIGHWAY STATION COUNTS BY DISTANCE



Source: CEC-A15

INTERSTATE FREEWAY STATION COUNTS BY DISTANCE



Source: CEC-A15

FEATURED TOPIC

HIGHWAY, FREEWAY, AND INTERSTATE RETAIL GASOLINE SALES AND STATION DISTRIBUTION

The CEC has been collecting gasoline sales from retail fuel outlet since 2006 as part of the [California Retail Fuel Outlet Annual Reporting Requirement](#). Previous Petroleum Watch editions have used the survey response data to analyze gasoline stations. A 2020 edition shows that 93 percent of new gasoline stations include convenience store as an amenity. In the [January 2020 Petroleum Watch](#), 80 percent of gasoline sales in 2018 were within one mile of a highway or freeway per California Department of Transportation (Caltrans) [GIS data](#). This issue of *Petroleum Watch* is an update of gasoline sales by fuel brand, which was last updated in the [October 2020](#) and [July 2021](#) issues. This edition also provides updates on gasoline sales and station counts from the nearest highway or freeway using Tele Atlas mapping.

MARKET SHARE UPDATE

[California Retail Gasoline Market Share](#) shows that from 2010 to 2021, market share has shifted more to hypermarkets (e.g. Costco) and unbranded gasoline sales while branded fuels are heading in the opposite direction. These branded fuels are Chevron, ARCO, Shell, 76, ExxonMobil, and Valero. The total share of branded gasoline sales decreased from 70.7 percent in 2010 to 63.4 percent in 2021. During the same time period, unbranded and hypermarket sales increased from 29 percent to 45.1 percent. One of the most noticeable changes is ARCO branded from 16.7 percent in 2020 to 14.1 percent in 2021. The main reason was because Marathon Petroleum Corporation sold 3,800 of their Speedway stations to 7-Eleven in early 2021, as reported in [Supermarket News](#). A total of 161 California ARCO stations were likely part of that deal, resulting in lower reporting and change of ownership for some ARCO branded stations.

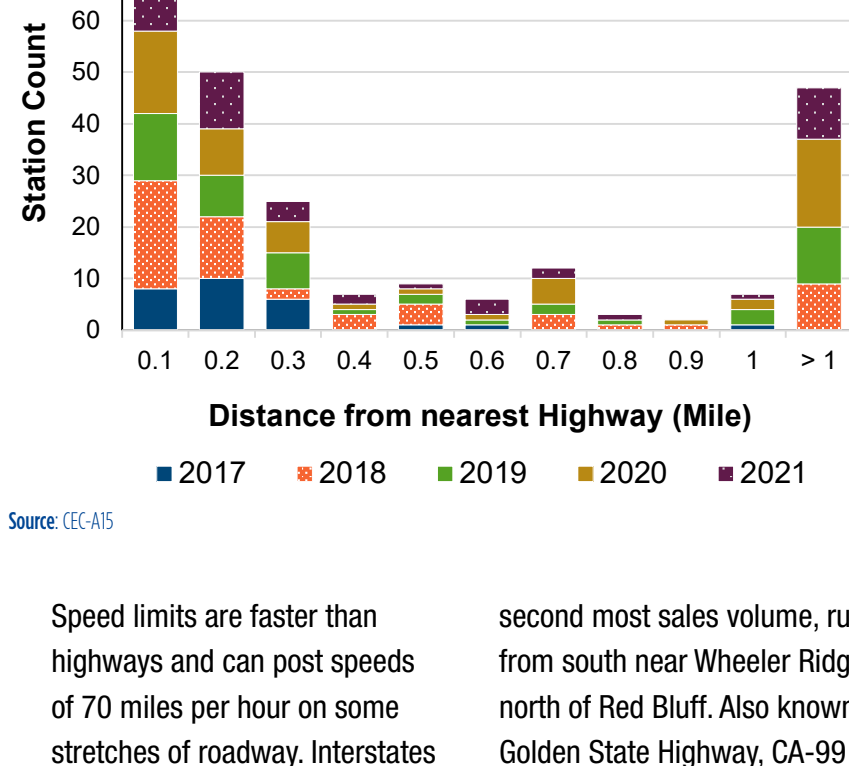
Despite their higher prices, consumers continue to fill up at branded stations. Branded fuel retailers have marketed their products in various ways to get consumers to their pump, as discussed in the [July 2021 Petroleum Watch](#). One of these marketing strategies is the use of TOP TIER® licensing that states its fuel quality standard is recommended by automobile brands such as Audi, BMW, GM, Ford, Honda, Toyota, Mercedes-Benz, and Volkswagen. Many retailers, both branded and unbranded, offer rewards programs to purchase fuel at a discount, or bundle services like car washes to discount their gasoline prices.

WHERE CONSUMERS ARE FUELING

[U.S. Department of Transportation](#) (U.S. DOT) reported that there is a total of 3.9 million miles of public roads in the U.S. In California, there are over 15,347 miles of [combined highways and freeways](#), including two corridors with over 800 miles of roadway. Those two are Interstate 5 and Highway 101. Interstate 5 starts south of the United States-Mexico border and runs along the central valley to north of the Oregon-California border, stretching 801 miles with 421 on- and off-ramps. Other highways, like Highway 101 and Highway 1, are popular routes that run through cities along some of the most scenic coastal counties. The chance of an established gasoline station under a mile of these ramps is very likely and is discussed in more detail in the [January 2020 Petroleum Watch](#). While highways, freeways, and interstates are similar, they have unique definitions:

- **Highway** – A highway typically has two lanes but may have more and may take drivers into a city as a “main” street. To access a highway, driver can enter using ramps or intersecting streets. Speed limits are slower compared to a freeway. An example of a highway is CA-101 that runs north and south, including going through the city streets of San Francisco and over the Golden Gate Bridge. Highways may have pedestrian pathways and allow nonmotorized vehicle such as bicycles and farming vehicles on the roadway.
- **Freeway** – A freeway typically has four or more lanes. The only way drivers can access a freeway are by controlled-access on- and off-ramps. The Commission (CTC) and Caltrans will refer to a freeway as a “controlled access highway.”

NEW STATIONS FROM NEAREST HIGHWAY OR FREEWAY



Source: CEC-A15

Speed limits are faster than highways and can post speeds of 70 miles per hour on some stretches of roadway. Interstates are examples of a freeway.

- **Interstate** – An interstate connects two or more states. Its characteristics are the same as freeways, but roadway boundaries are regulated and maintained by the federal government. Some interstate routes with [three-digit numbers](#) are spur routes that connect one- or two-digit interstates or navigate around cities. For example, I-805 is a spur route of I-5.

2021 CALIFORNIA TOTAL GASOLINE SALES

The [2021 California Retail Fuel Outlet Annual Reporting](#) (CEC-A15) received 84 percent of total California gasoline sales from 8,435 stations. In 2018, the majority of gasoline sales and station counts were located within one mile of a highway or freeway, as reported in the [January 2020 Petroleum Watch](#). [Top Locations by Sales](#) breaks down the 2021 gasoline sales and [Top Locations by Station Counts](#) breaks down active CEC-A15 retail fuel outlet stations. Four slices of the pie are top-ten interstates, top-ten highways, 126 other U.S. and CA highways, and 13 other interstates. A total of 34.4 percent, or 4.0 billion gallons were sold near the top-ten interstates. A total of 29.7 percent, or 3.4 billion gallons were sold by the top-ten highways. The remaining slices of California gasoline sales totals 35.9 percent, split between 126 other highways and 13 other interstates. Like gasoline sales, percentage of stations located near the top-ten highway and top-ten interstate is 30.2 percent and 29.3 percent, respectively. The other highways and interstates share 40.5 percent of total stations.

HIGHWAY AND INTERSTATE SALES AND STATION COUNTS

[U.S. and California Highway Sales by Distance](#) and [Interstate Freeway Sales by Distance](#) show where volume of gasoline is sold when breaking down each of the top-ten highways and interstates by distance of within 100 yards, between 100 yards to a quarter mile, and farther than a quarter mile. Those stations located within 100 yards are more convenient for drivers to refuel and get back onto the road. Comparing the top ranked highway and interstates by total sales within 100 yards, Highway US-101 had 40 million more gallons at 113 million gallons than Interstate 5 at 73 million gallons. Most interstates have less sales within 100 yards compared to highways because of the ease of exiting highways without controlled ramps. U.S. and CA highways tend to have low volume traffic because of limited number of lanes. Most stretches of highway, like US-101 and CA-1, are in rural areas where fuel services are likely on the side of roadway. Five of those top-ten interstates are located on roadways running through Los Angeles, San Diego, and Orange counties. These counties are [top-three counties](#) by gasoline sales since 2010.

The top-ten highways by volume sales in California in descending order are: US-101, CA-99, CA-1, CA-91, CA-60, US-50, CA-4, CA-22, CA-78, and CA-118. These highways together total 2,568 miles of roads within California. The shortest highway is CA-22 at 15 miles, and the longest highway is US-101 at 813 miles. [Highway CA-22](#) is ranked eighth in the gasoline sales at 135 million gallons and has 17 controlled ramps. CA-22 is in the heart of Orange County, running from (West) Long Beach to (East) Santa Ana. The highway is 2.6 miles away from one of the world's most popular theme parks, Disneyland, where people travel around the globe to visit year-round. US-101 is the number one ranked highway by total stations of 946 and sales of 1.0 billion gallons, as shown in [U.S. and California Highway Station Counts by Distance](#). Highway 99 had the

second most sales volume, running from south near Wheeler Ridge to north of Red Bluff. Also known as the Golden State Highway, CA-99 has as many as 711 stations nearby that sold 663 million gallons of gasoline. Highway 1 is one of the most scenic routes because a majority of this highway is by the coast. It is different from other highways and interstates because 35 percent of its sales and 38 percent of stations are within 100 yards. Under 100 yards, Highway CA-1 has a total of 175 stations that sold 149 million gallons; this is the most of any highway in the state.

Interstates 5, 10, 15, 405, 80, 310, 680, 880, 215, and 480 are the top-ten ranked interstates by sales in California. Interstate 5 is the second longest stretch of roadway, running through 16 counties including 4 of the [top ten](#) by highest gasoline sales by volume. It runs through cities like Sacramento, Fresno, Los Angeles, Anaheim, and San Diego. Those cities are all in the top nine of the 2021 survey responses for gasoline sales. Combined sales for those cities in 2021 was 1.5 billion gallons. There are 846 stations servicing I-5 with total sales exceeding 1.0 billion gallons, as shown in [Interstate Freeway Station Counts by Distance](#). Interstate 10 is ranked second with 681 million gallons in total sales. Running 244 miles, it intersects I-5 in Los Angeles as it goes from Santa Monica Pier to the California-Arizona border. In Northern California, Interstate 80 starts in San Francisco, runs through the capital city of Sacramento and to California-Nevada border. It is ranked five in sales but third rank in total stations. With 132 total on- and off-ramps and 168 stations, I-80 has more than twice as many stations as on and off ramps. Its total sales under 100 yards are as much as Interstates 15, 405, and 210 combined, totaling 33 million gallons.

NEW STATIONS FROM NEAREST HIGHWAY OR FREEWAY

In the last five years, newly constructed stations have been built closer to highways and freeways, as shown in [New Stations from Nearest Highway or Freeway](#). Seventy-eight percent of the 248 new stations reported between 2017 and 2021 were within one mile. The highest count of new stations was within 0.1 mile at 72 total stations compared to all outside of one mile at 55 total stations. An overwhelming 60 percent of new stations were within 0.3 miles, about one of every two stations being built are 0.3 miles or closer. In addition to branded companies focusing on gasoline additives, credit cards, or car washes for a discount on fuel, most new branded stations, both company and independently owned, are settling in front of highways and freeways to draw first choice for customers to refuel. Fifty percent of gasoline sales are within a quarter of a mile, and that may increase in the future.

FINDING STATIONS

Every year, the CEC works to ensure that it has located all retail fuel stations in California. This usually involves purchasing a list of stations from OPIS. This year, the CEC found additional sources to identify fuel stations in the state. These sources include:

- [Air districts](#), which permit gasoline dispensing facilities.
- [California State Parks, Division of Boating and Waterways](#), which maintains a database of boating facilities and the services offered such as fuel sales.
- [AirNav](#), which lists airports and the fuel providers at each airport.
- [Weights and measures departments](#), which enforce quality standards of petroleum products.

The CEC sends each newly identified station a copy of the CEC-A15 report to complete. Visit our website for more information about [CEC-A15 Results](#).



The CEC welcomes feedback on Petroleum Watch. Please contact Media and Public Communications Office at mediaoffice@energy.ca.gov.

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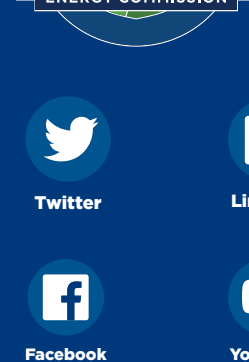
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