

# PETROLEUM WATCH

CALIFORNIA ENERGY COMMISSION

## INSIDE

- Gasoline Retail Prices by Brand
- Diesel Retail Prices by Region
- Jet Fuel Spot Differentials
- Diesel Spot Differentials
- Gasoline Spot Differentials
- Outright Spot Prices

Featured Topic:  
California Spot Markets

## REFINERY NEWS

- **Phillips 66 Wilmington:** On January 1, a unit over pressurized during a startup, resulting in unplanned flaring ([Cal OES](#)).

## CALIFORNIA GASOLINE RETAIL PRICES BY BRAND

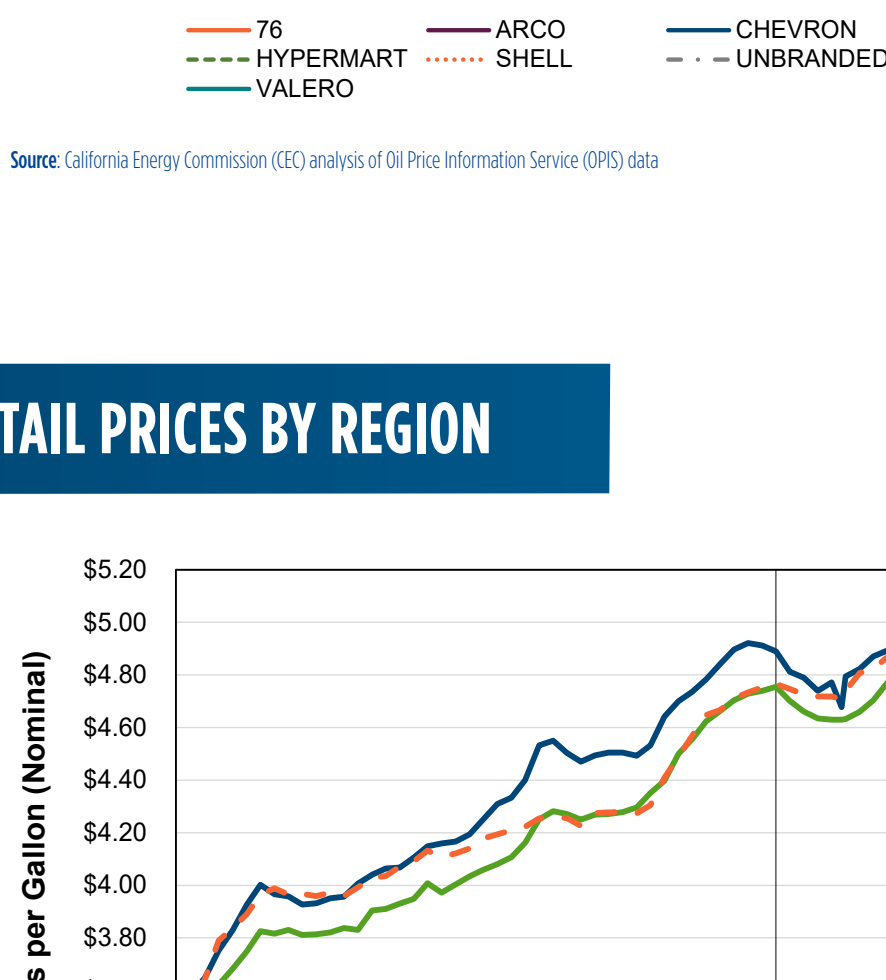
### January 2022 vs. 2021

(Percentage Change)

76	39% higher
ARCO	44% higher
Chevron	37% higher
Hypermart	40% higher
Shell	38% higher
Unbranded	41% higher
Valero	40% higher

### January 2022 Averages

76	\$4.70
ARCO	\$4.49
Chevron	\$4.84
Hypermart	\$4.31
Shell	\$4.78
Unbranded	\$4.50
Valero	\$4.62



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

## CALIFORNIA DIESEL RETAIL PRICES BY REGION

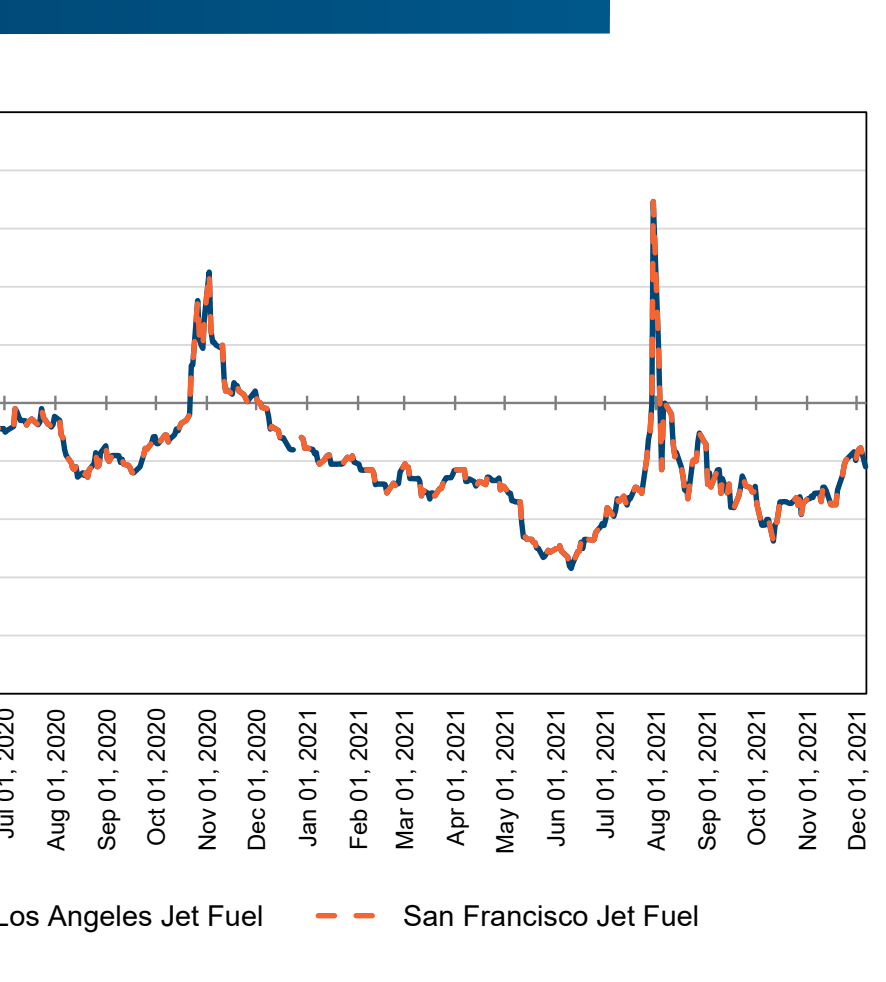
### January 2022 vs. 2021

(Percentage Change)

Northern CA	39% higher
Central CA	42% higher
Southern CA	41% higher

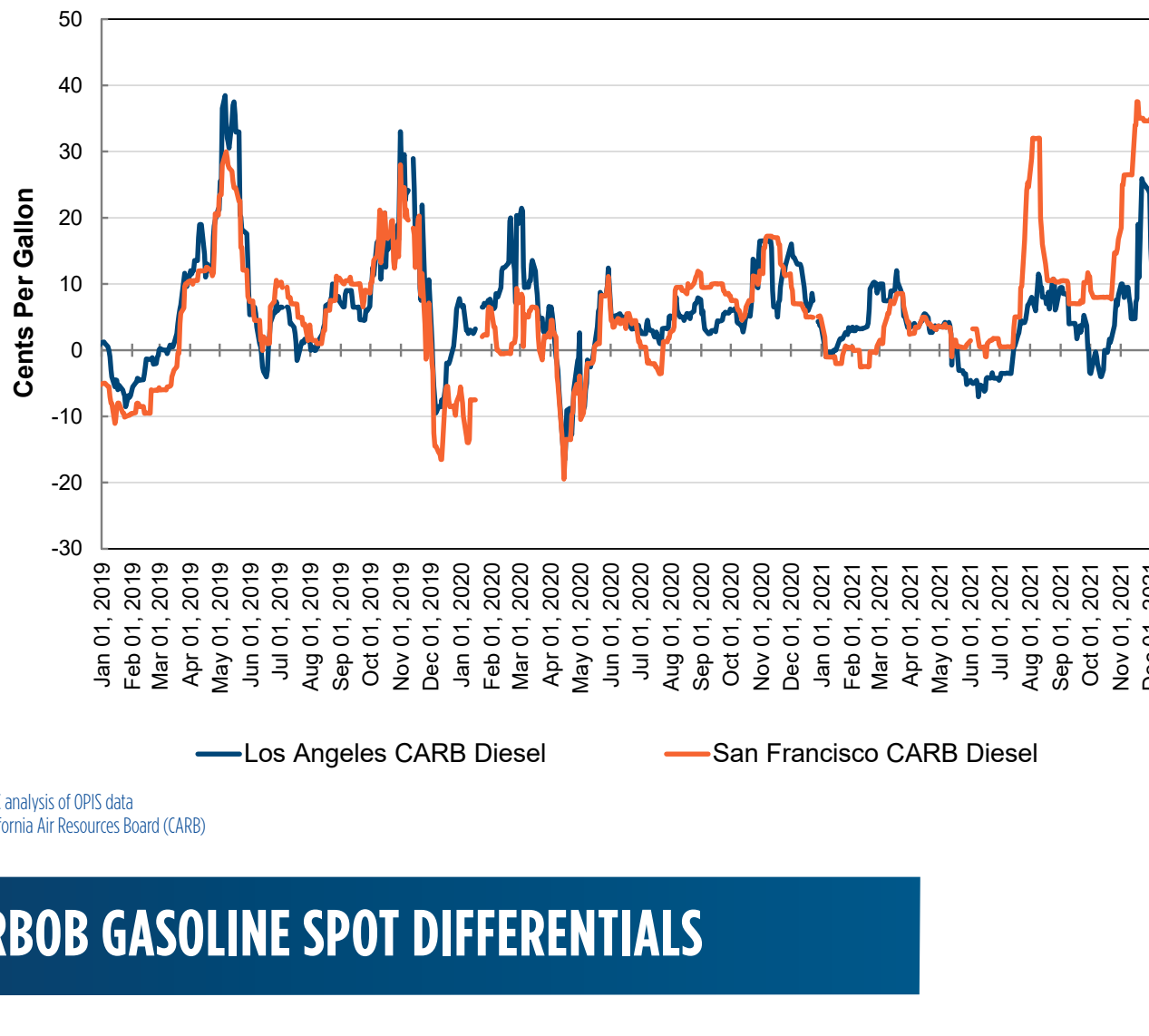
### January 2022 Averages

Northern CA	\$4.84
Central CA	\$4.69
Southern CA	\$4.81



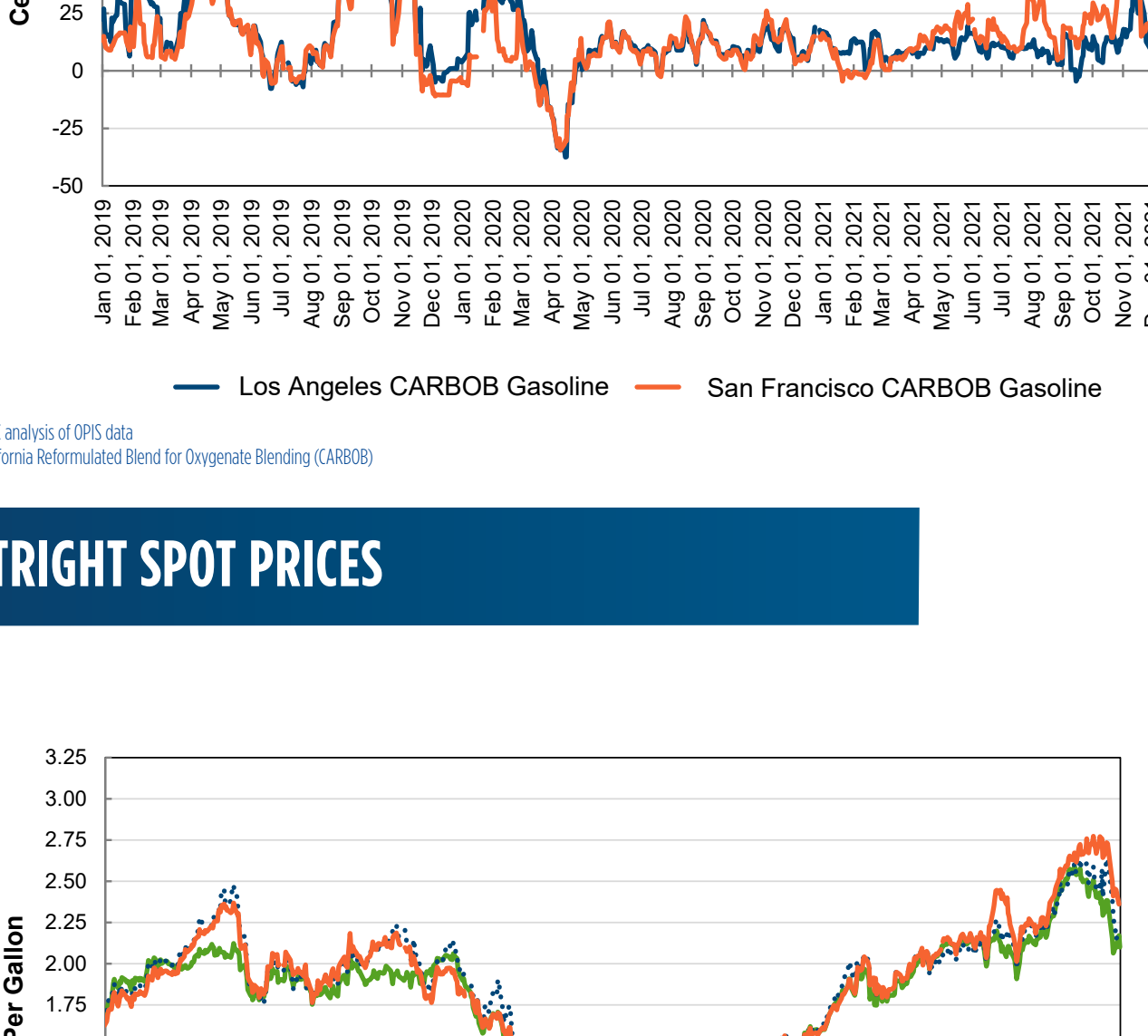
Source: CEC analysis of OPIS data

## JET FUEL SPOT DIFFERENTIALS



Source: CEC analysis of OPIS data

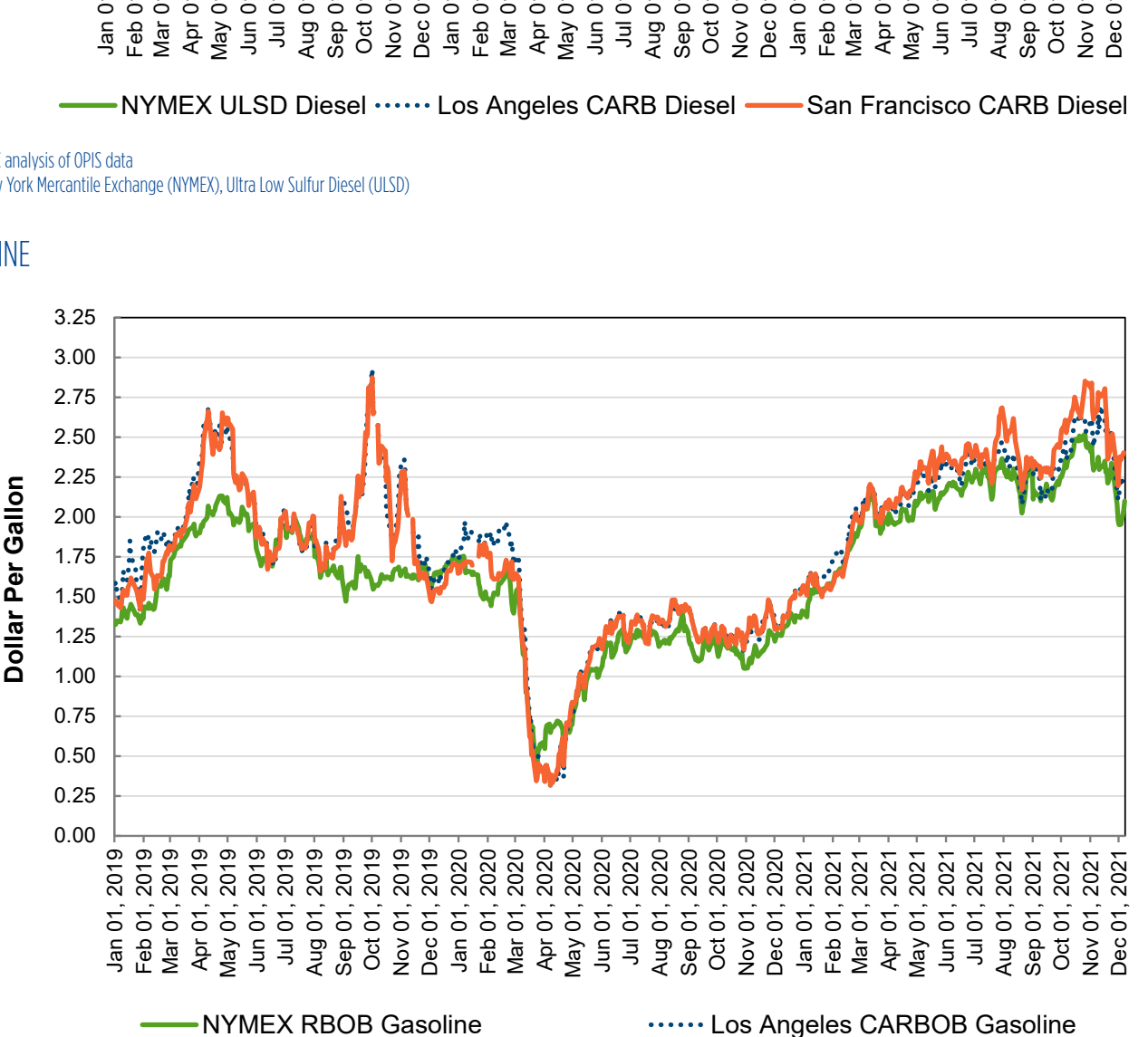
## CARB DIESEL SPOT DIFFERENTIALS



Source: CEC analysis of OPIS data

Notes: California Air Resources Board (CARB)

## CARBOB GASOLINE SPOT DIFFERENTIALS

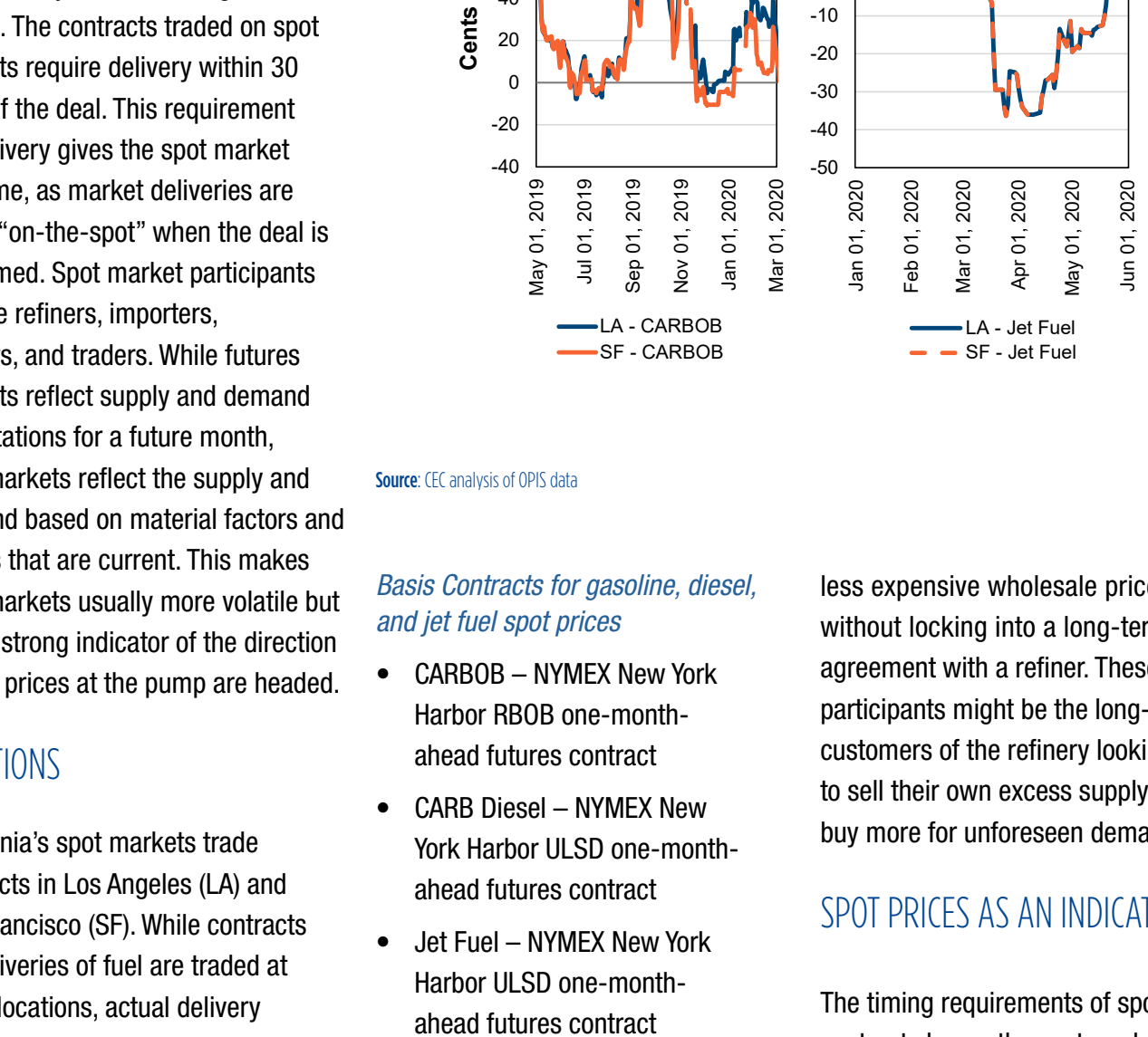


Source: CEC analysis of OPIS data

Notes: California Reformulated Blend for Oxygenate Blending (CARBOB)

## OUTRIGHT SPOT PRICES

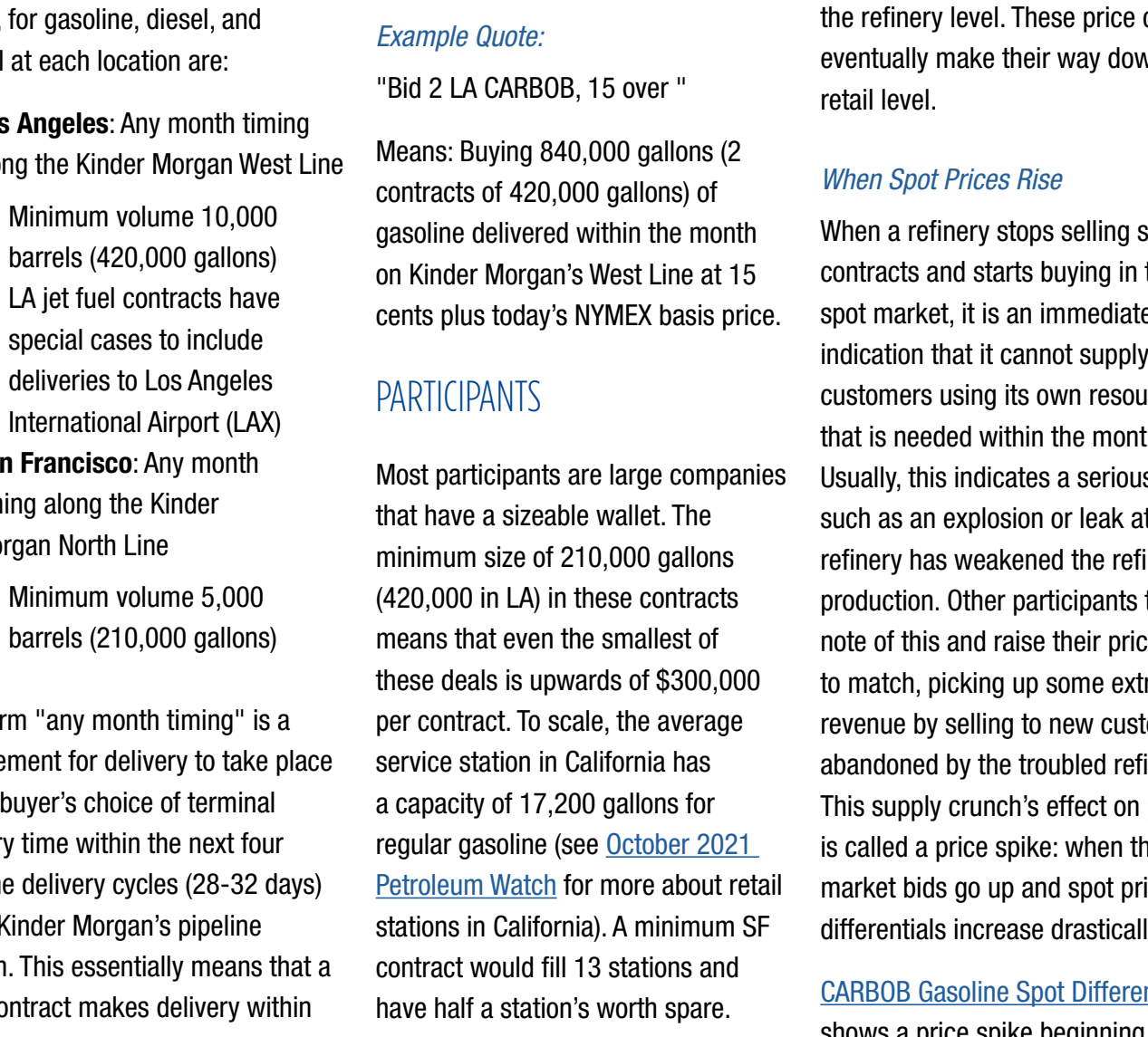
### DIESEL



Source: CEC analysis of OPIS data

Notes: New York Mercantile Exchange (NYMEX), Ultra Low Sulfur Diesel (ULSD)

### GASOLINE



Source: CEC analysis of OPIS data

Notes: California Reformulated Blend for Oxygenate Blending (RBOB)

## FEATURED TOPIC

### CALIFORNIA SPOT MARKETS

California's spot markets are regional markets where contracts for deliveries of gasoline (CARBOB), diesel (CARB Diesel) and jet fuel are bought and traded. The contracts traded on spot markets require delivery within 30 days of the deal. This requirement for delivery gives the spot market its name, as market deliveries are made "on-the-spot" when the deal is confirmed. Spot market participants include refiners, importers, brokers, and traders. While futures markets reflect supply and demand expectations for a future month, spot markets reflect the supply and demand based on material factors and events that are current. This makes spot markets usually more volatile but also a strong indicator of the direction where prices at the pump are headed.

### LOCATIONS

California's spot markets trade contracts in Los Angeles (LA) and San Francisco (SF). While contracts for deliveries of fuel are traded at these locations, actual delivery of fuel takes place along the Kinder Morgan pipeline system.

### Specifications and Timing

Contract specifications, as reported by the [Oil Price Information Service \(OPIS\)](#), for gasoline, diesel, and jet fuel at each location are:

- **Los Angeles:** Any month timing along the Kinder Morgan West Line
  - Minimum volume 10,000 barrels (420,000 gallons)
  - LA jet fuel contracts have special cases to include deliveries to Los Angeles International Airport (LAX)
- **San Francisco:** Any month timing along the Kinder Morgan North Line
  - Minimum volume 5,000 barrels (210,000 gallons)

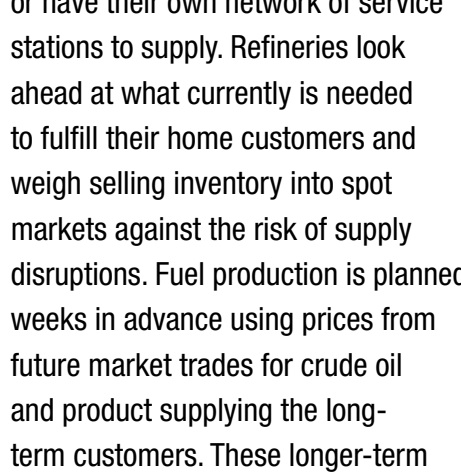
The term "any month timing" is a requirement for delivery to take place at the buyer's choice of terminal delivery time within the next four pipeline delivery cycles (28-32 days) along Kinder Morgan's pipeline system. This essentially means that a spot contract makes delivery within a month, instead of for a futures contract.

For example, a buyer in Fresno who purchases a CARBOB spot contract in the LA spot market on December 5, would then further arrange to take the fuel from a Kinder Morgan Fresno terminal at any time before January 5.

CARBOB is the gasoline specifically traded in the LA and SF spot markets. This is basically gasoline before it is blended with ethanol (an oxygenate). This is important to note because Kinder Morgan does not allow ethanol into the pipeline system. Ethanol product blended with finished product at the gasoline pump is called California reformulated gasoline (or CA RFG).

Because all deliveries are on Kinder Morgan's pipeline system, all CARBOB gasoline specifications are determined by the delivery date on Kinder Morgan's Reid Vapor Pressure (RVP) schedule, regardless of the day the trade was settled (see [September 2020 Petroleum Watch](#) for more information). This is applicable only to gasoline and affects trades during the RVP blend transitions in California.

### SPOT DIFFERENTIAL EVENTS



Source: CEC analysis of OPIS data

*Basis Contracts for gasoline, diesel, and jet fuel spot prices*

- CARBOB – NYMEX New York Harbor RBOB one-month-ahead futures contract
- CARB Diesel – NYMEX New York Harbor ULSD one-month-ahead futures contract
- Jet Fuel – NYMEX New York Harbor ULSD one-month-ahead futures contract

The total, or outright price, is determined by the date of the deal's completion, using that date's closing price of the basis NYMEX contract plus the differential.

### Example Quote:

"Bid 2 LA CARBOB, 15 over"

Means: Buying 840,000 gallons (2 contracts of 420,000 gallons) of gasoline delivered within the month on Kinder Morgan's West Line at 15 cents plus today's NYMEX basis price.

### PARTICIPANTS

Most participants are large companies that have a sizable wallet. The minimum size of 210,000 gallons (420,000 in LA) in these contracts means that even the smallest of these deals is upwards of \$300,000 per contract. To scale, the average service station in California has a capacity of 17,200 gallons for regular gasoline (see [October 2021 Petroleum Watch](#) for more about retail stations in California). A minimum SF contract would fill 13 stations and have half a station's worth spare.

Under regular market conditions, there is a set of participants usually making offers (selling) of contracts and another set making bids (buys).

### Selling Participants

Refiners, who own refineries within California, are the prime suppliers of CARBOB, CARB diesel, and jet fuel in the SF and LA spot markets. Many refineries have long-term contracts with partner service station brands or have their own network of service stations to supply. Refineries look ahead at what currency is needed to fulfill their home customers and weigh selling inventory into spot markets against the risk of supply disruptions. Fuel production is planned weeks in advance using prices from future market trades for crude oil and product supplying the long-term customers. These longer-term contracts are not sold on the spot market, as the refinery has locked in a base price on this. Instead, under normal conditions in California, refineries use the spot market to sell spare inventory, overproduced barrels of fuel, or swap supply locations with other refiners.

less expensive wholesale prices without locking into a long-term agreement with a refiner. These participants might be the long-term customers of the refinery looking to sell their own excess supply or buy more for unforeseen demand.

### SPOT PRICES AS AN INDICATOR

The timing requirements of spot contracts keeps the spot market limited to participants who need thousands of gallons of fuel in less than a month in California. Changes to spot contract price then gives a short-term indication of supply availability at the refinery level. These price changes eventually make their way down to the retail level.

### When Spot Prices Rise

When a refinery stops selling spot contracts and starts buying in the spot market, it is an immediate indication that it cannot supply all its customers using its own resources that is needed within the month. Usually, this indicates a serious issue such as an explosion or leak at a refinery has weakened the refiner's production. Other participants take note of this and raise their prices to match, picking up some extra revenue by selling to new customers abandoned by the troubled refiner.

This supply crunch's effect on prices is called a price spike: when the spot market bids go up and spot price differentials increase drastically.

[CARBOB Gasoline Spot Differentials](#) shows a price spike beginning on September 18, 2019. CARBOB price differentials saw increases for a whole two weeks. By September 24, Valero Benicia, PBF Refining Torrance, and Chevron El Segundo had [reported production issues](#), while Valero Wilmington had already shutdown for nearly a month for planned maintenance. 2019, prices peaked on October 1, 2019, with LA CARBOB spot at 135.2 cents per gallon and SF CARBOB at 129.9 cents per gallon. The spreads would settle to more normal levels by October 22, 2019.

### When Spot Prices Fall

A reversed situation called a price crash can occur when there is too much fuel in the system. Usually storage tanks along the Kinder Morgan system called community storage can be used as a short-term storage for marketers. When the storage tanks are completely full and not enough withdrawals are made from community storage, the marketers are in a glut and fuel can no longer be delivered at that terminal. Marketers stop bidding on contracts and start selling contracts with their excess fuel.

An example of a lasting crash occurred in early March 2020. [Jet Fuel Spot Differentials](#) shows the spot differential at a discount (negative) to the NYMEX futures basis in March and again in December (both LAX and SF spot prices are almost always equal, they have closed at different prices on rare occasions). Jet fuel spot prices crashed falling to -36.3 cpg in response to the COVID-19 pandemic as airlines canceled flights and grounded planes (see [July 2020 Petroleum Watch](#)).

### WRAPPING UP

California's fuel spot markets are made possible with a pipeline system allowing large deliveries of fuel within a month. Prices are quoted as a differential that is added to the basis price from the NYMEX to give the total outright price. Spot market activity provides good indication of the direction of supply and demand based on current events. Price spikes can indicate supply issues, especially those at refineries. Price crashes can indicate drastic falls in demand like jet fuel prices during stay-at-home orders in California during the beginning of the COVID-19 pandemic. Future Petroleum Watch topics will further explain parts of California's fuel system that can change or influence the spot market price.

Visit our website for more information about [California's Petroleum Market](#).

The CEC welcomes feedback on Petroleum Watch. Please contact Media and Public Communications Office at [mediaoffice@energy.ca.gov](mailto:mediaoffice@energy.ca.gov).

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