PETROLEUM WATCH
California Energy Commission
July 2016

Recent Petroleum News and Outside Analyses

Prices

- **Crude Oil Prices:** In early June, Brent and West Texas Intermediate (WTI) crude oil prices reached the highest points since last year. They reached $46.69 and $46.70 on June 24, respectively, and were roughly 20 percent below year-ago prices due to U.S. crude oil inventories remaining at historically high levels.
- **California Retail Gasoline Prices:** California gasoline prices increased in June, reaching $2.92 on June 27. This was an increase of $0.12 from the end of May and is $0.62 above the national price.
- **California Retail Diesel Prices:** California diesel prices rose in June and finished the month at $2.80, an increase of $0.08 since the end of May. The California-less-U.S. diesel price gap of $0.38 on June 27 was the widest seen in 2016.

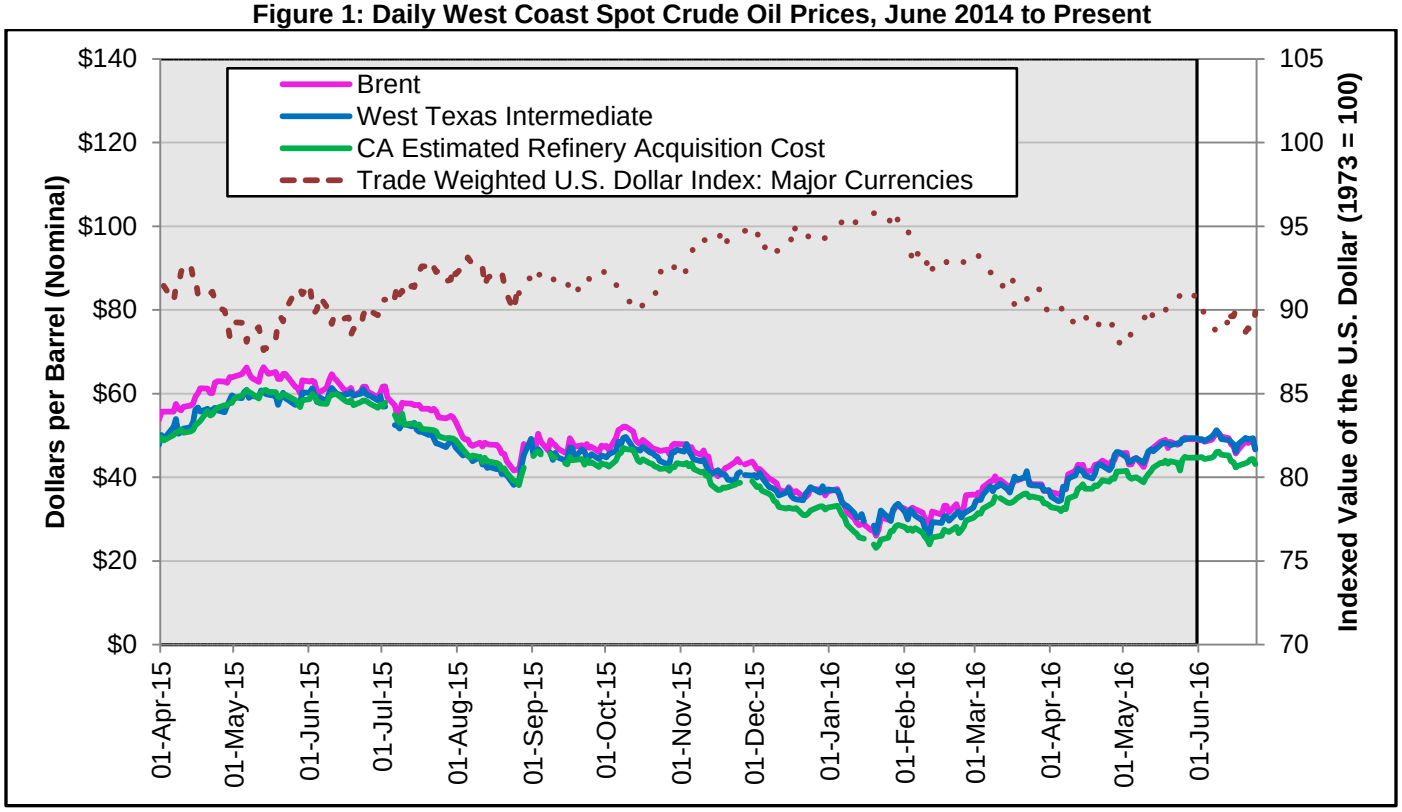
Refining News

- **Torrance Refinery:** On July 1, PBF Energy acquired the 149,500-barrels-per-day (bpd) Torrance refinery from ExxonMobil. This acquisition follows ExxonMobil's completion of a series of repairs following the February 2015 explosion. This acquisition by PBF is the first change in ownership for the refinery since 1931 (interperiod ownership changes were via merger).
- **Shell Martinez Refinery:** Shell completed planned maintenance at its 166,000-bpd Martinez refinery in mid-June. A crude unit and a coker unit had been in turnaround at the facility since early May.
- **Phillips 66 Rodeo Refinery:** On June 28, Phillips 66's 139,000-bpd Rodeo refinery in the San Francisco Bay Area experienced flaring due to a "process upset."
- **Valero Benicia Refinery:** Valero was forced to shut down a fluid catalytic cracker unit at its 145,000-bpd Benicia refinery on June 24 due to flaring. This shutdown resulted in Valero later suspending all unbranded open rack operations for gasoline in Northern and Southern California until the problem was resolved.

Product of the Energy Assessments Division's Supply Analysis Office.

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, June 2014 to Present



Source: U.S. Energy Information Administration (EIA), Oil Price Information Service (OPIS), and Federal Reserve Bank of St. Louis. (FRED)
Note: Shaded areas on all graphs indicate previous report data. Unshaded areas indicate new data since January's *Petroleum Watch*.

Crude oil prices increased slightly in June (**Figure 1**). The price of Brent crude oil reached $50.73 on June 8, the highest price seen since October 2015. On the same day, WTI reached $51.23, the highest posting since July 2015. These prices led to an increase in California Estimated Refiner Acquisition Cost (CA-RAC)[1] of crude oil, which reached $46.12 on June 9, the highest level of 2016.

Using the FRED index of the U.S. dollar against the major currencies, the average purchasing power of the dollar increased by 4 percent in June from the May average. Typically, a stronger dollar combined with large U.S. crude oil inventories (**Figure 2**) leads to a downward pressure on prices. Despite these indicators pointing toward lower prices, CA-RAC was $2.03 higher than the May average.

Crude Oil Prices

June 2016 vs 2015
(Percent Change)

Brent	**21% lower**
WTI	**18% lower**
CA-RAC	**24% lower**

June 2016 Averages

Brent	**$48.35**
WTI	**$48.77**
CA-RAC	**$44.22**

June 24, 2016

Brent	**$46.69**
WTI	**$46.70**
CA-RAC	**$43.12**

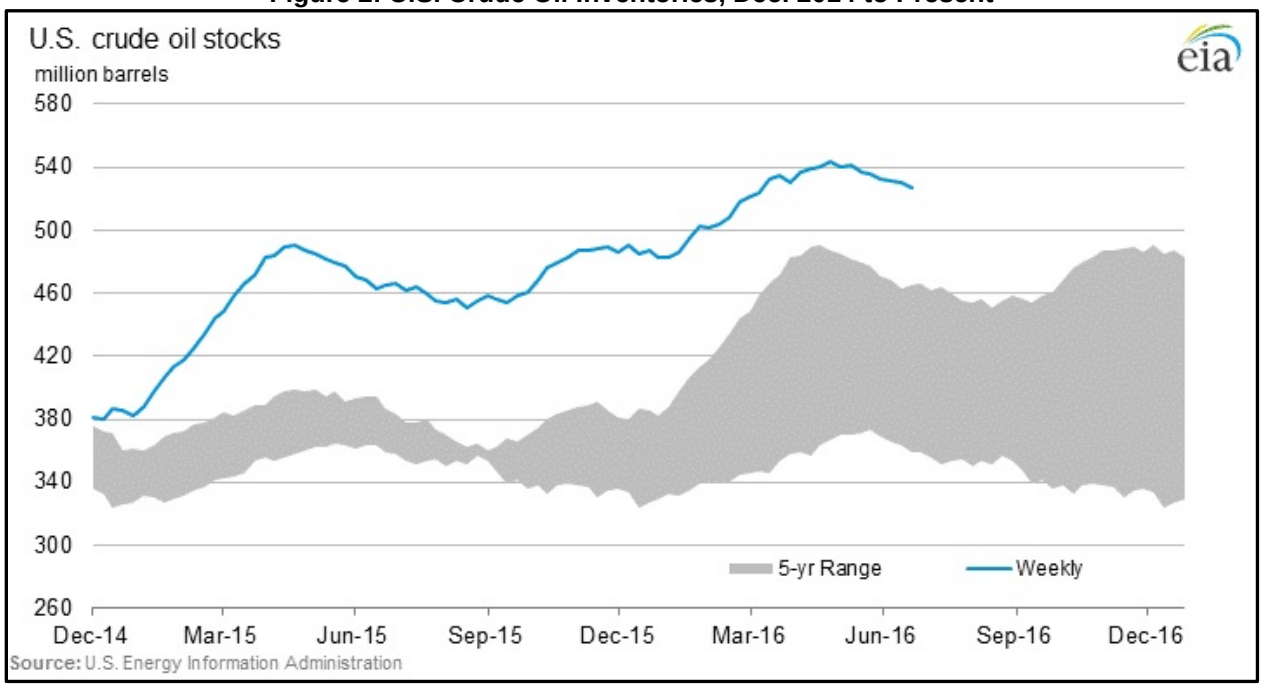
1 *California estimated refiner acquisition cost* is an estimate of the average price of crude oil paid by California refineries. Energy Commission staff estimates a weighted average of the prices of California (San Joaquin Valley) crude, Alaskan crude, and foreign crude.

Crude Oil Production and Storage

U.S. crude oil inventories decreased in June although Brent crude oil prices averaged above $48 per barrel (**Figure 2**). However, crude oil inventories are 13.8 percent higher than the same time last year and continue to set new five-year highs, well above highs set in 2015 for crude oil storage.

- U.S. crude oil production for June is estimated by the EIA at 8.6 million bpd, down from 8.8 million bpd in April. This is a 7.7 percent decline from a year ago.
- Crude oil inventories in the United States fell by 10 million barrels during June to 527 million barrels for the week ending June 24. This is the sixth straight week of inventory decline. Despite continued high inventory levels, imports of crude oil remain strong at 7.8 million barrels for June.
- U.S. crude oil refinery crude oil consumption rose to 17 million barrels in week ending June 24, with refineries operating at 93 percent of capacity.

Figure 2: U.S. Crude Oil Inventories, Dec. 2014 to Present

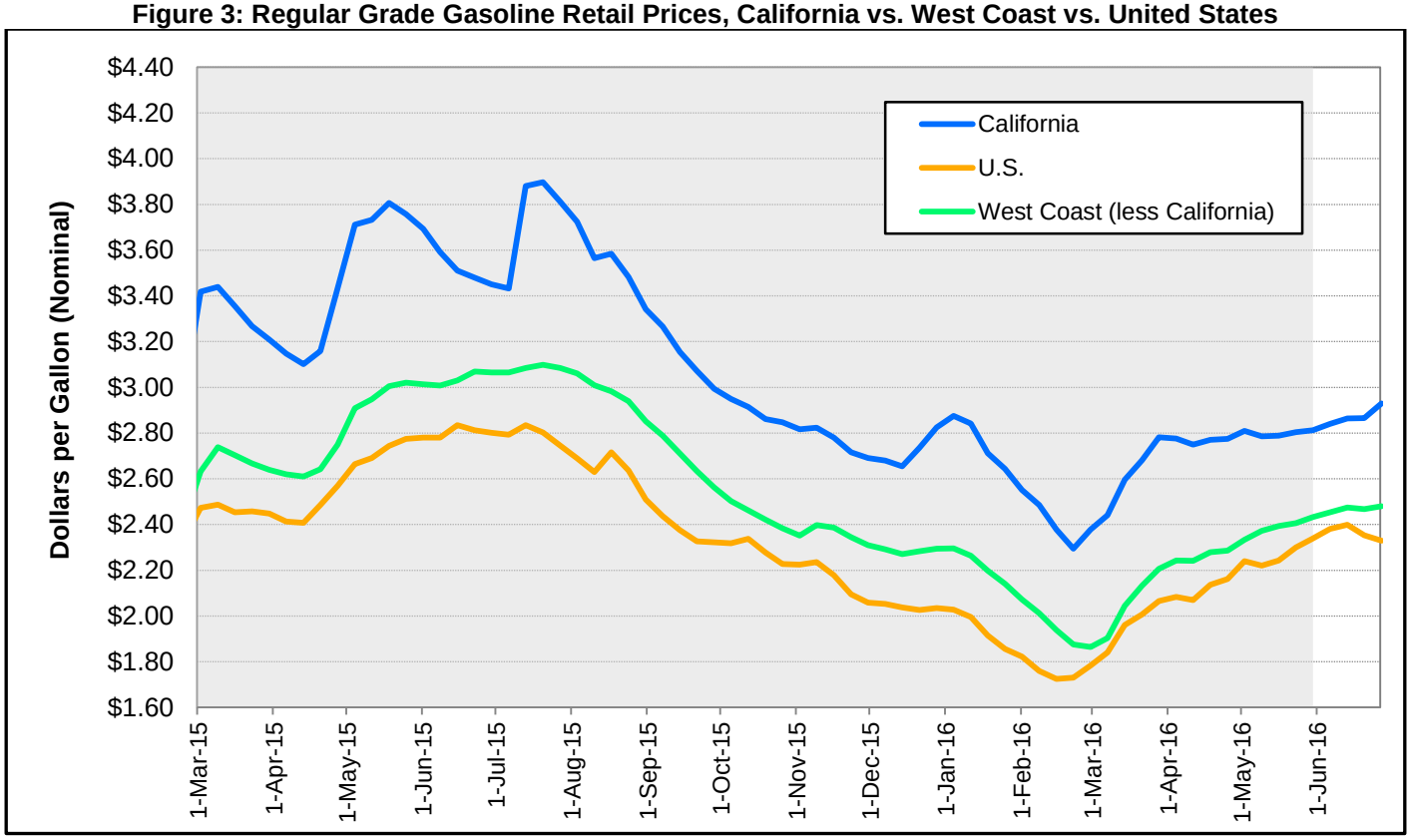


Source: U.S. EIA

- According to the May data from the Organization of the Petroleum Exporting Countries, its oil output decreased to 32.36 million barrels per day. This decrease in overall production occurred despite an increase in Saudi Arabia's crude oil production, which increased by 84,000 bpd.

Gasoline and Diesel Retail Prices

Figure 3: Regular Grade Gasoline Retail Prices, California vs. West Coast vs. United States



Source: U.S. EIA

California gasoline prices rose $0.11 from $2.82 on May 30, to $2.93 by June 27 (**Figure 3**). The monthly average retail price increased $0.07 from $2.80 to $2.87, marking the highest retail average in 2016. While June 2016 had the highest average seen this year, it is still $0.68 less expensive compared to the June 2015 average of $3.55.

Gasoline prices increased across the United States and West Coast during June: starting from $2.34 and $2.43, respectively, on May 30, and finishing at $2.48 and $2.32 on June 27. Since May 2016, the difference in price between California and the rest of the United States has slowly widened. At the end of May 2016, the price difference between California and the United States was $0.47; by the end of June 2016, the price difference widened to $0.60. The likely reasons for the widening gap are California's low gasoline inventory levels (**Figure 8**) and rising gasoline demand from the summer driving season.

Gasoline Prices

June 2016 vs 2015
(Percent Change)

California	**19% lower**
U.S.	**16% lower**
West Coast	**19% lower**

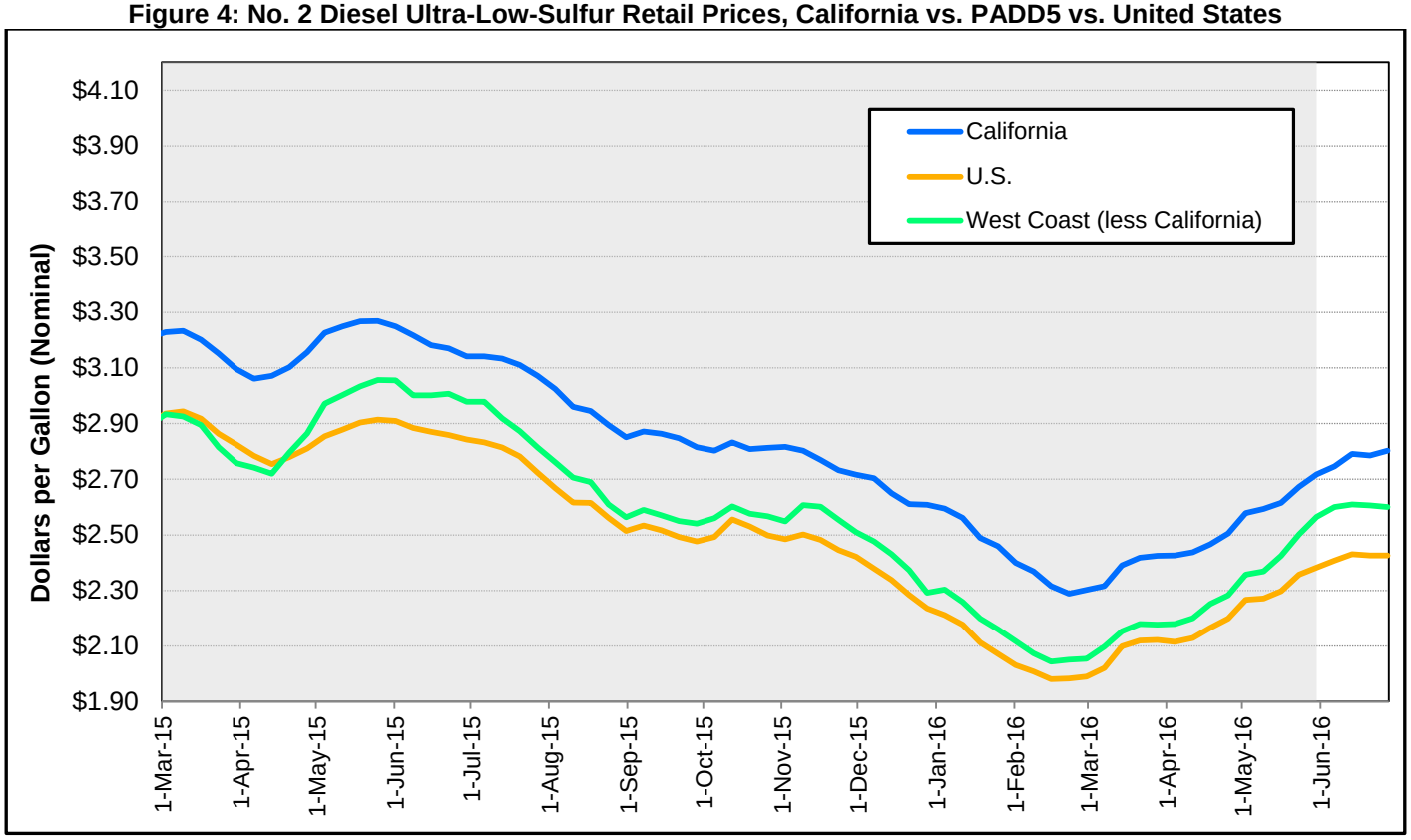
June 2016 Averages

California	**$2.87**
U.S.	**$2.37**
West Coast	**$2.47**

Week of June 27, 2016

California	**$2.93**
U.S.	**$2.33**
West Coast	**$2.48**

Figure 4: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States



Source: U.S. EIA

California diesel prices rose by $0.08 from $2.72 on May 30 to $2.80 on June 27. June 2016 prices remain 13 percent lower than diesel prices at this time last year (**Figure 4**). The United States and West Coast diesel prices stayed flat through June, the United States increased a meager $0.02 to $2.42, and diesel prices for the West Coast stayed put at $2.60. For California, the United States, and the West Coast, June marked the highest retail price for diesel in 2016 (**Figure 4**).

The difference in prices between California less United States widened from $0.34 to $0.38, marking the largest price gap in 2016. California consistently fetches higher prices for diesel based on the stricter clean fuel standards, with this gap averaging $0.24 over the past two years. However, California's prices have risen faster than the rest of the United States due to a midmonth drop in California diesel inventories.

Diesel Prices

June 2016 vs 2015
(Percent Change)

California	**13% lower**
U.S.	**16% lower**
West Coast	**13% lower**

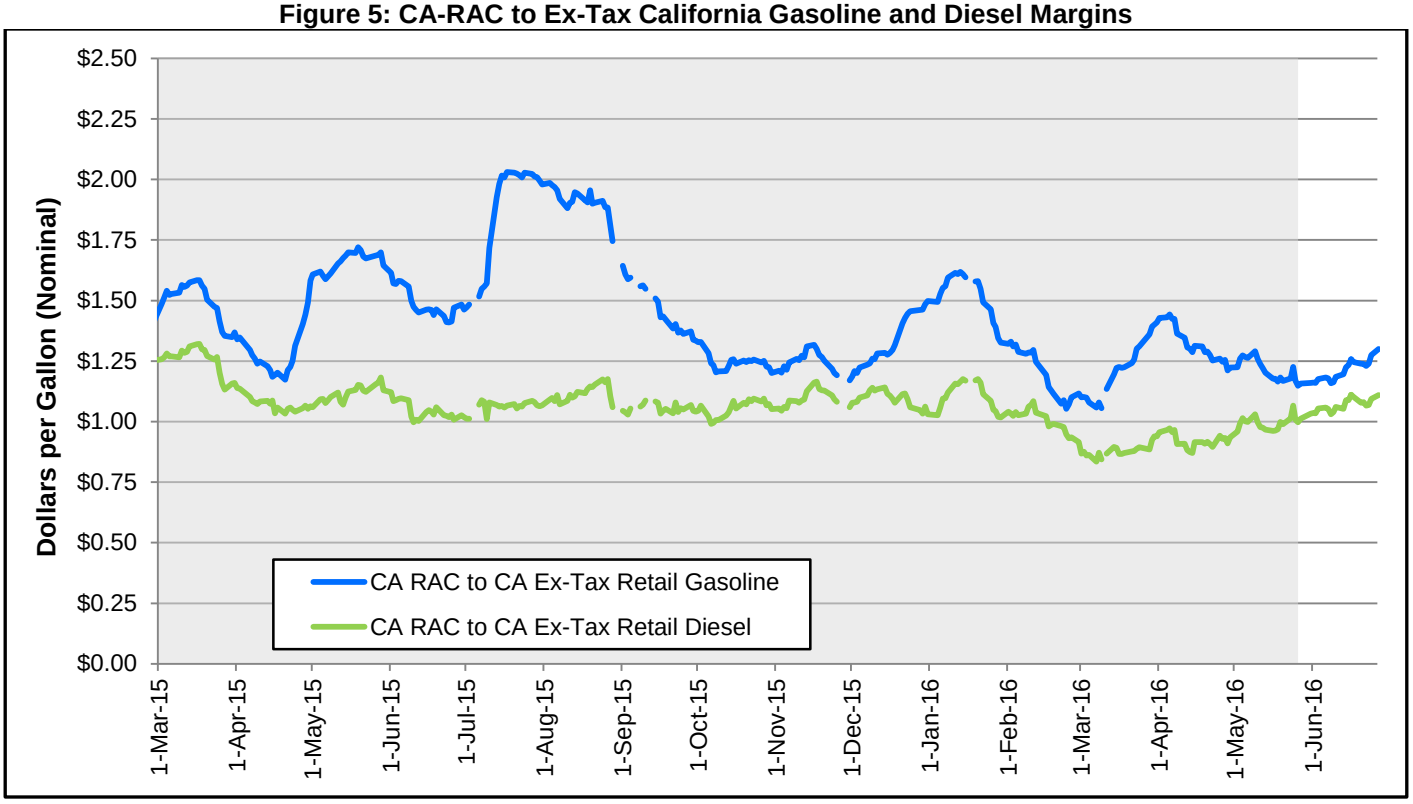
June 2016 Averages

California	**$2.78**
U.S.	**$2.42**
West Coast	**$2.60**

Week of June 27, 2016

California	**$2.80**
U.S.	**$2.42**
West Coast	**$2.60**

Figure 5: CA-RAC to Ex-Tax California Gasoline and Diesel Margins



Source: U.S. EIA and OPIS

The California Refinery Acquisition Cost (CA-RAC)-to-ex-tax retail fuel margins increased in June (**Figure 5)**. The California gasoline margin increased $0.14 from $1.16 on June 1 to $1.30 on June 27, while the California diesel margin rose $0.07, from $1.03 on June 1 to $1.10 on June 27.

Historically, fuel margins have remained at the $0.40 to $0.80 level under normal market conditions, while never rising above $1.00 until a major supply disruption event. Data from 2013, at the Energy Commission's estimated margin detail page, show the most recent example of this trend. The highest gasoline margin tallied in 2013 was $0.95 on the week of June 24, 2013, which is a margin nearly 10 percent lower than the lowest margin tallied in 2016. (Gasoline margins reached a low of $1.05 on February 24, 2016.) California refinery capacity has recovered since the explosion at ExxonMobil Torrance in February 2015, but elevated fuel margins remain.

Crude to Retail Margins

June 2016 vs 2015
(Percent Change)

Gasoline	**18% lower**
Diesel	**2% higher**

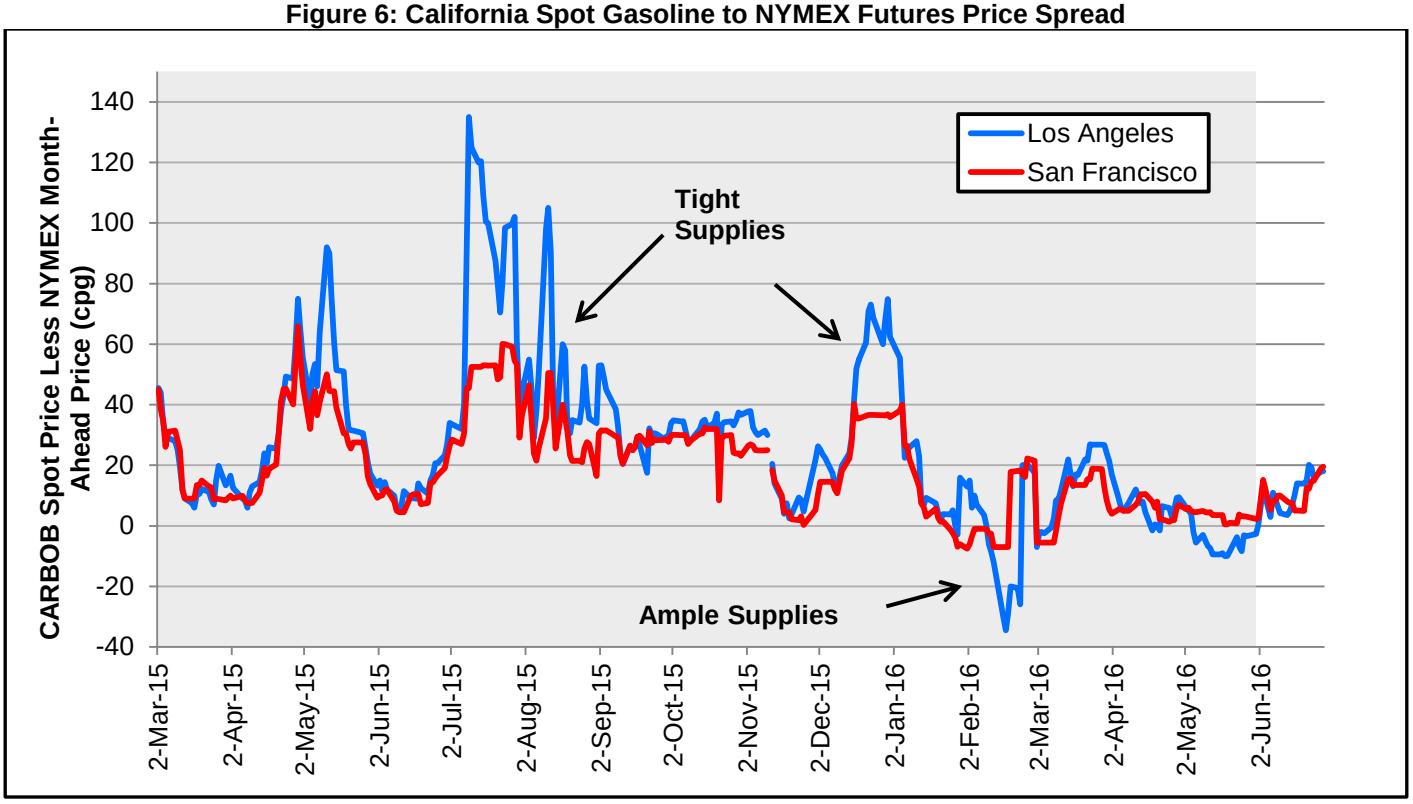
June 2016 Averages

Gasoline	**$1.21**
Diesel	**$1.06**

June 27, 2016

Gasoline	**$1.30**
Diesel	**$1.11**

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

Throughout June, the Los Angeles (LA)-less-NYMEX (New York Mercantile Exchange) gasoline spot price spread increased from $0.00 to $0.18 from June 1 to June 28 (**Figure 6**). This increase raised the June average spot price by $0.16, averaging $0.11 for the month after decreasing to -$0.05 in May. The LA-less-NYMEX gasoline spot price spread for June is $0.02 lower than the same time last year, which was a lull in the volatile 2015 spot market.

The San Francisco (SF)-less-NYMEX futures gasoline price spread averaged $0.07 since February 29 and has not been above $0.20 over that period. In the month of June it has slowly increased, reaching $0.19 on June 28.

In 2016, both California spot gasoline prices have been noticeably less volatile, averaging $0.05 since April compared to $0.27 for the same time last year. Following market fundamentals, California gasoline production was noticeably strong, frequently going over the five-year average band (**Figure 8**). Since April, California production of gasoline has averaged 190,000 barrels per week higher than the three months preceding it.

Gasoline Spot–Futures Spread

June 2016 vs 2015

(cents)

Los Angeles	**2¢ lower**
San Francisco	**1¢ lower**

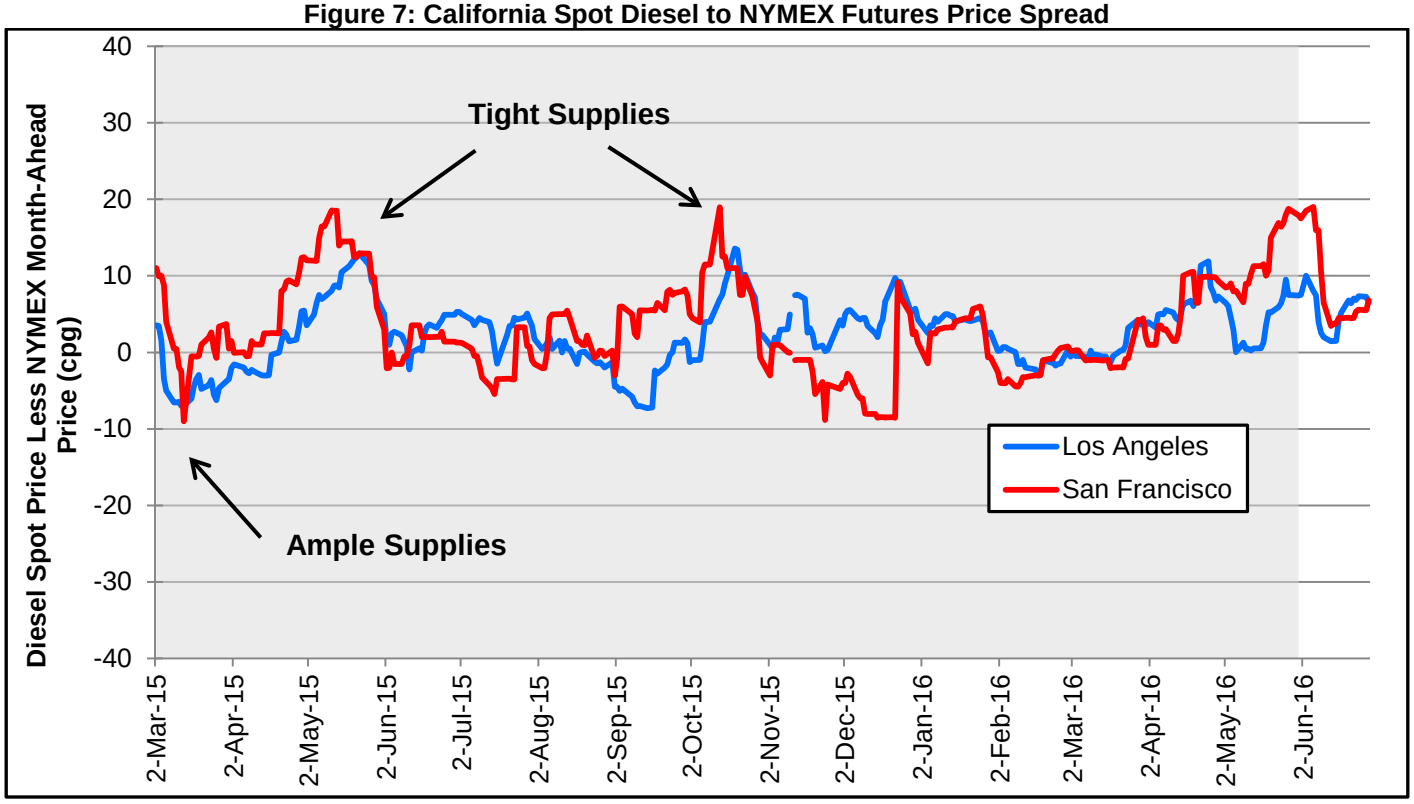
June 2016 Averages

Los Angeles	**11¢**
San Francisco	**10¢**

June 28, 2016

Los Angeles	**18¢**
San Francisco	**19¢**

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

The LA-less-NYMEX diesel price spread decreased to $0.02 in mid-June and then steadily climbed to $0.07 during the second half of the month (**Figure 7**).This early month decrease in prices is linked to strong Southern California diesel production in early June, before a midmonth decrease in production increased the LA-less-NYMEX diesel price spread during the rest of the month. (See Weekly Fuels Watch Report.) With this increase, the monthly average LA-less-NYMEX spread increased to $0.05, a 12 percent increase from a year ago and 38 percent increase from a month ago.

The SF-less-NYMEX diesel price spread showed a similar but more pronounced trend in June. It decreased from $0.19 in the early part of the month before slowly increasing to $0.06 by the end of June. Shown in the Weekly Fuels Watch Report, Northern California diesel production increased from the low end of the five-year band to the upper midsection of the band, an increase of 0.3 million barrels, stimulating the June decrease in prices. The average SF-less-NYMEX diesel price spread for June decreased 12 percent compared to a year ago and decreased 29 percent from May.

Diesel Spot–Futures Spread

June 2016 vs 2015
(cents)

Los Angeles	**3¢ lower**
San Francisco	**7¢ lower**

June 2016 Averages

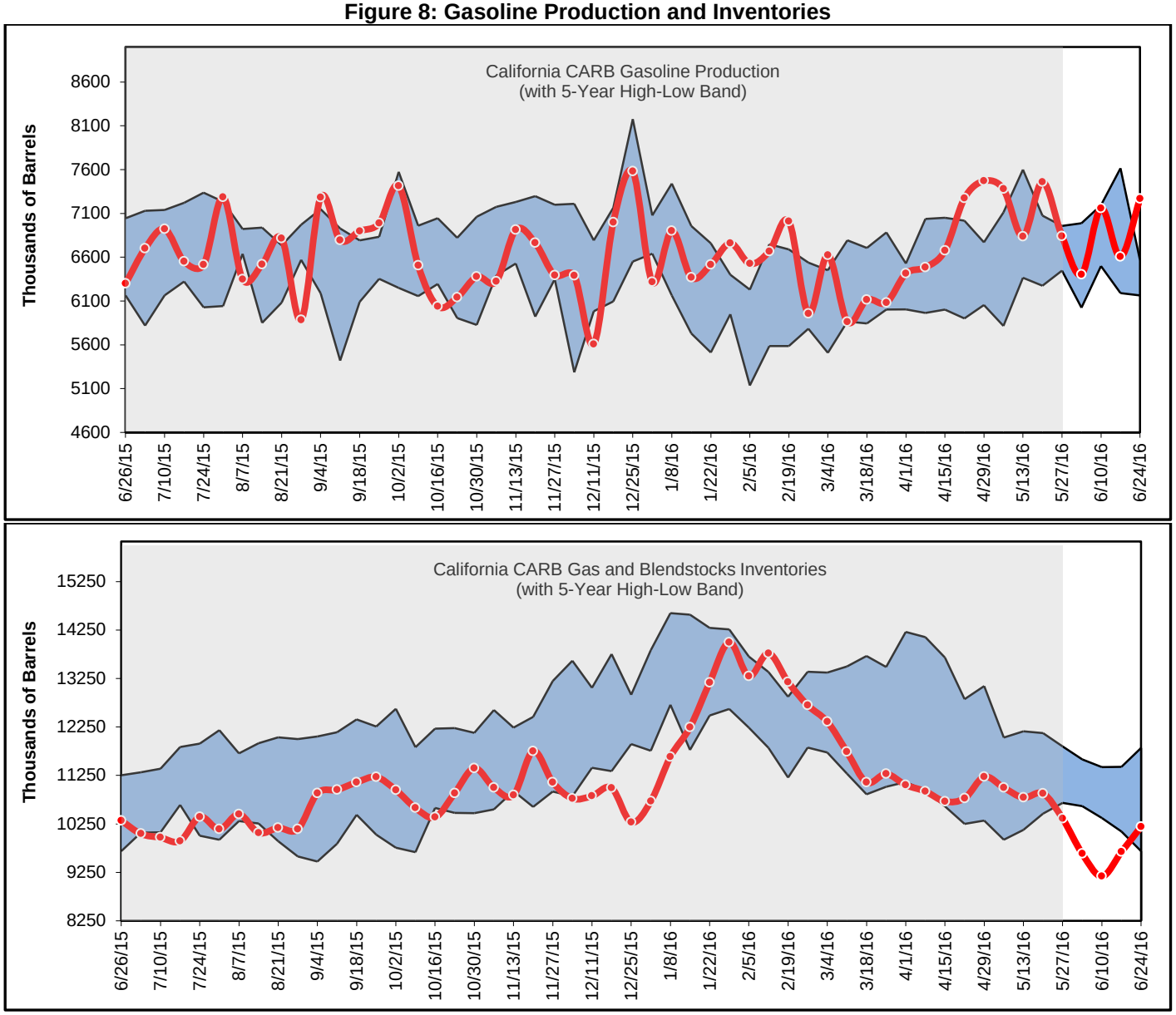
Los Angeles	**5¢**
San Francisco	**8¢**

June 28, 2016

Los Angeles	**7¢**
San Francisco	**7¢**

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

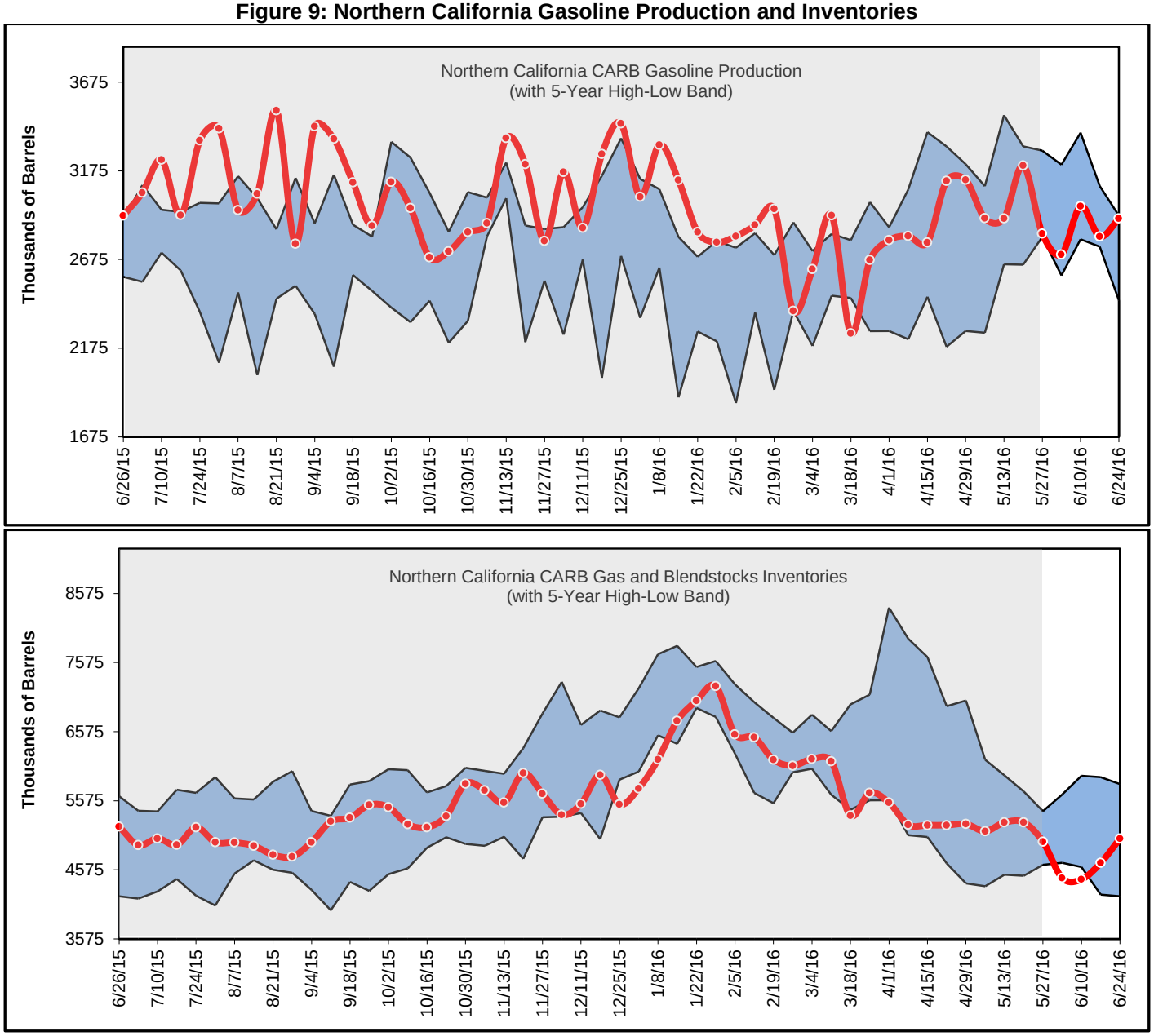


Source: Petroleum Industry Information Reporting Act (PIIRA) data

After spending portions of 2015 below the five-year band, California gasoline production in 2016 has remained within the five-year band and ended the week of June 24 above the band at 7.3 million barrels-per-week (bpw). Over the month of June, California gasoline production averaged 514,000 bpw more than the same month last year.

California gasoline inventories dropped to a five-year low at 9.2 barrels on June 10, which was also the lowest inventory level recorded since 2002. Gasoline inventories recovered to within the five-year band at 10.2 million barrels during the week of June 24 after being under the five-year band for four weeks straight. These steady production figures, combined with falling inventories, indicate a possible increase in California gasoline consumption, a normal occurrence during summer months.

Figure 9: Northern California Gasoline Production and Inventories

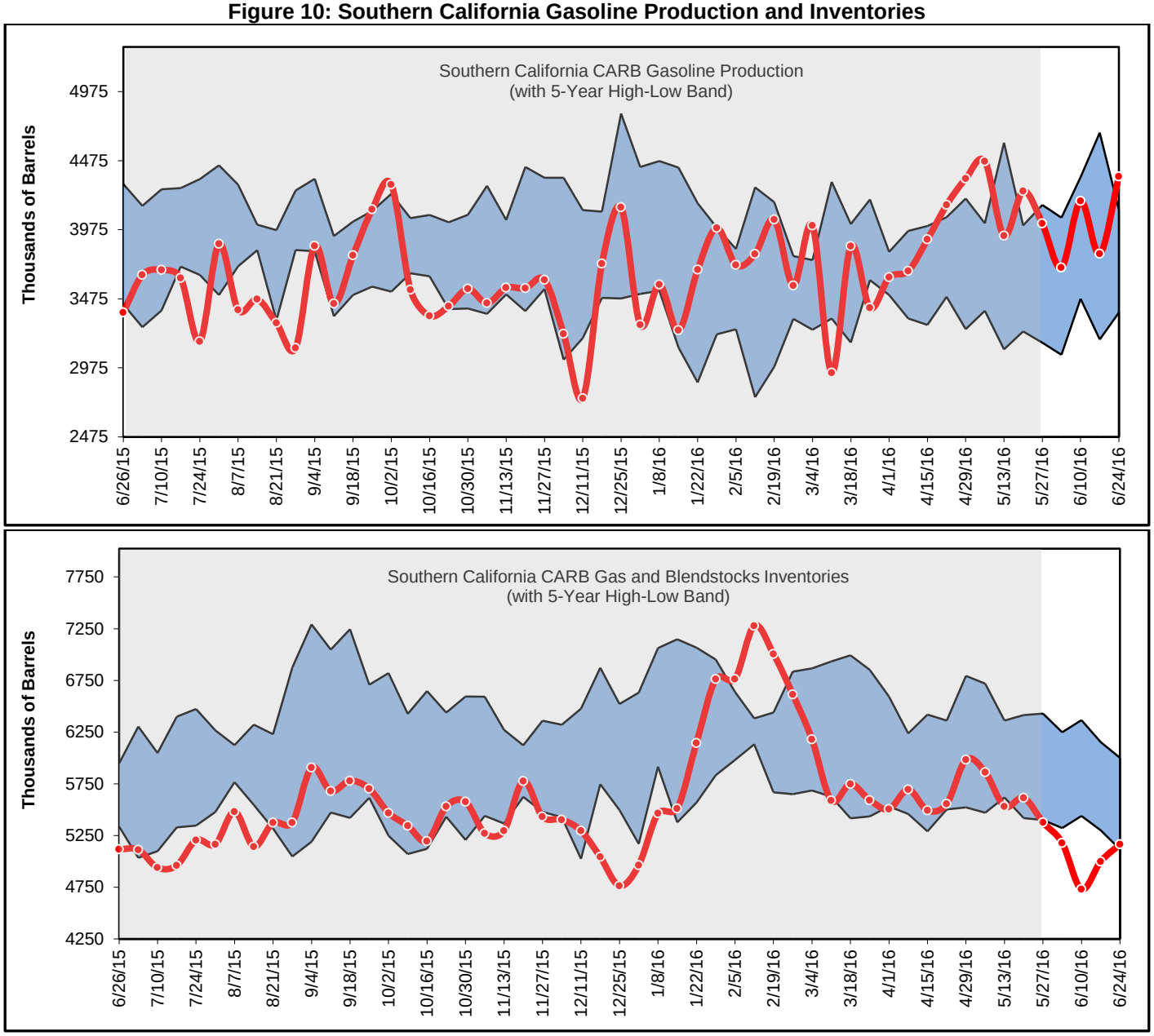


Source: PIIRA data

Northern California gasoline production ended June 24 at 2.91 million barrels, which was 16,000 bpw less compared to the week of June 26, 2015 (**Figure 9**). In the past five weeks, Northern California gasoline production averaged 2.8 million bpw and remained within the five-year band.

Gasoline inventories in Northern California dropped to a 2016 low at 4.5 million bpw on June 3 then decreased further to 4.4 million bpw on June 10. These low in gasoline inventories increased the San Francisco spot price, which rose from $0.05 on June 20 to $0.13 on June 21 (**Figure 6**).

Figure 10: Southern California Gasoline Production and Inventories

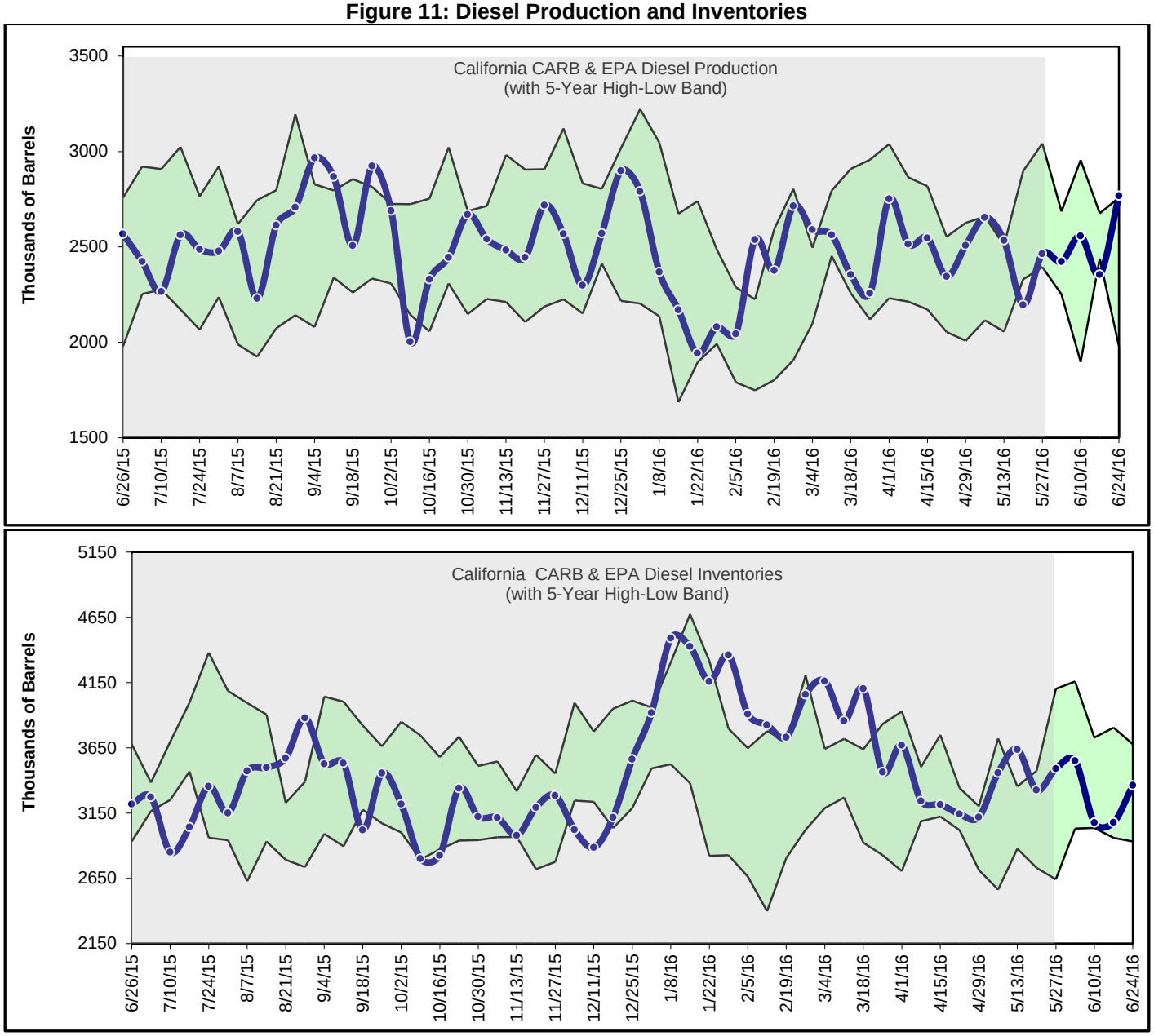


Source: PIIRA data

Southern California gasoline production during June remained in the high region of the five-year high-low band, increasing to 4.5 million barrels on June 24 (**Figure 10**). June Southern California gasoline production averaged 4.0 million barrels, 700,000 barrels more than a year ago, aided by the restart of the ExxonMobil's Torrance refinery. (Transfer of ownership of this refinery occurred July 1.)

Inventory levels dropped to a year-to-date low of 4.7 million barrels on June 10. With the increase in production and falling inventory levels, gasoline demand in Southern California likely increased during June. Inventory levels averaged 5.0 million barrels in the past four weeks compared to 5.6 million barrels a year ago.

Figure 11: Diesel Production and Inventories



Source: PIIRA data

California diesel production remained steady in June at roughly 2.5 million bpw (**Figure 11)**. This production level is similar to both last month's and last year's average. While production did appear to approach the lower region of the five-year band on the week of June 17, diesel production five-year bands are relatively tight, with these occurrences having little effect on spot markets.

California diesel inventory dropped from 3.6 million barrels down to 3.1 million barrels in the middle of the month, before settling at 3.4 million barrels the week of June 24. The average diesel inventory for June was just barely below both last month's and last year's average.