



PETROLEUM WATCH

California Energy Commission

February 2016

Recent Petroleum News and Outside Analyses

Prices

- **Crude Oil Prices:** Markets set a record low on January 26, 2016. Brent and West Texas Intermediate crude prices closed at \$26.01 and \$26.68 respectively, the lowest prices since September 2003.
- **California Gasoline Prices:** California gasoline prices continued to fall, while the price difference between California and the rest of the United States increased by \$0.13 from December 2015 to \$0.82 for the month of January 2016.
- **California Diesel Prices:** California diesel prices continued their steady decline, while the price difference between California and the rest of the United States increased by \$0.05 from December 2015 levels to \$0.38 for the month of January 2016.

Refining News

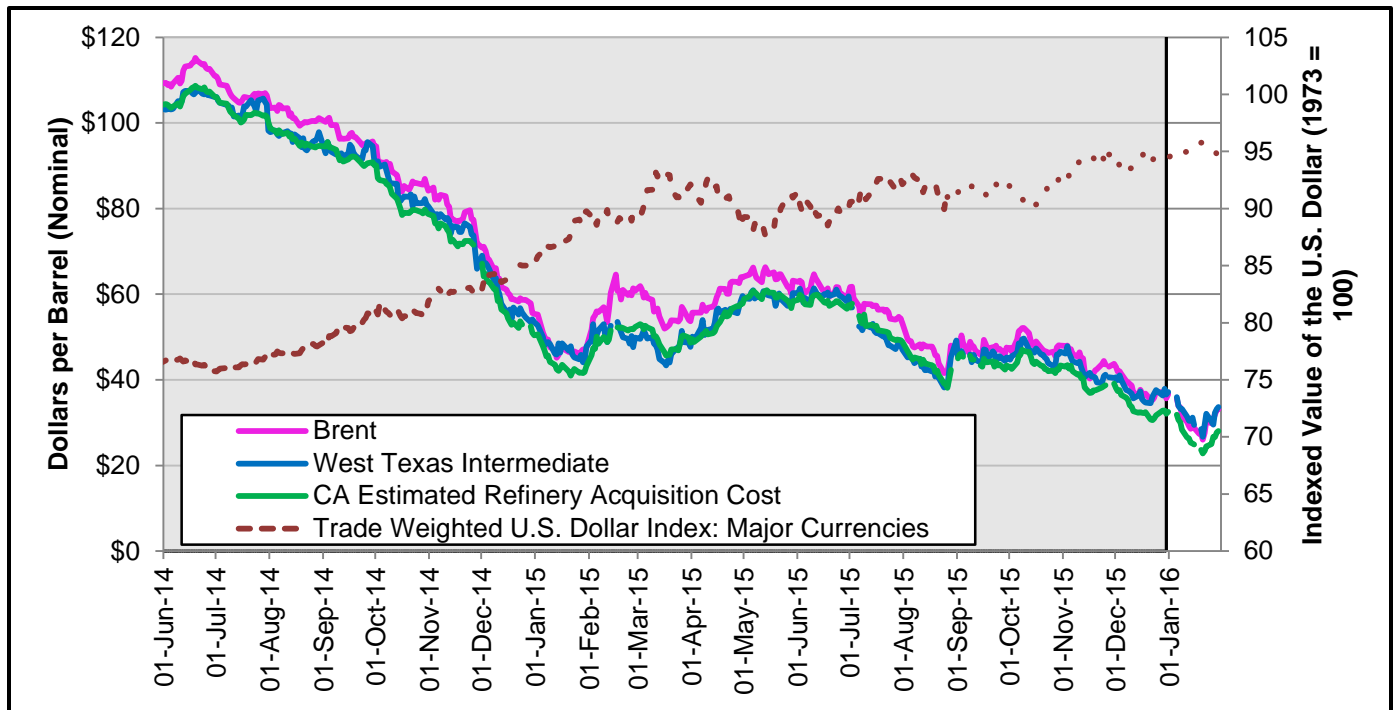
- **ExxonMobil Torrance Refinery:** Repair setbacks have pushed ExxonMobil's Torrance refinery restart from early 2016 to sometime in June 2016.
- **Phillips 66 Rodeo and Santa Maria Refineries:** Both refineries have entered planned maintenance that began early in January 2016 and will last one month each.
- **Air Products Wilmington Plant:** On January 23, 2016, the Wilmington hydrogen plant experienced a breakdown that resulted in flaring. The facility supplies hydrogen to both Tesoro's Los Angeles and Valero's Wilmington refineries, which could impact hydro-treatment and hydro-cracking operations for each refinery.
- **Chevron Richmond Refinery:** On January 24, 2016, the refinery began a month-long planned maintenance on a 40,000 barrels per day (bpd) catalytic reformer unit.
- **Tesoro Wilmington Refinery:** On January 24, 2016, the refinery restored operation at its 12,000 bpd sulfuric alkylation unit and 36,000 bpd fluid catalytic cracking units, which were shut down on December 22, 2015.
- **Tesoro Carson Refinery:** On January 29, 2016, the refinery shut down for an estimated month of planned maintenance for a 60,000 bpd crude distillation unit, 19,000 bpd delayed coker unit, and a number of other associated units.

Market News

- **U.S. Congress:** The U.S. Congress lifted the ban on crude oil exports in December 18, 2015. This action allowed the price of West Texas Intermediate crude to rise above Brent crude oil, unseen since May 2010.

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, June 2014 to Present¹



Source: U.S. Energy Information Administration (U.S. EIA), Oil Price Information Service (OPIS), and Federal Reserve Bank of St. Louis.

Crude oil prices continued to fall over January 2016 (Figure 1). In the course of 2015, the California Estimated Refiner Acquisition Cost² (CA-RAC) of crude oil fell 39 percent to \$28.07 on January 29, 2016 from \$41.62 on January 30, 2015. World oversupply coupled with a stronger U.S. Dollar continues to be the main factor behind the lowest crude oil prices since September 2003.

In December 2015, the U.S. Congress removed a long standing ban of crude oil exports. The removal of the ban affected the price difference between U.S. based West Texas Intermediate (WTI) crude oil and the internationally based Brent crude oil. In January, the average price of Brent crude fell 21 percent against the December 2015 average price, while the average price of WTI crude fell 5 percentage points less than Brent, 16 percent. This small difference was enough to change WTI from being \$0.90 less than Brent to \$1.10 more. This marks the first time the price of WTI crude consistently closed above Brent since May 2010.

¹ Shaded areas on all graphs indicate previous report data. Unshaded areas indicated and new data since January's *Petroleum Watch*.

² California estimated refiner acquisition cost is an estimate of the average price of crude oil paid by California refineries. CEC staff estimate proportions of California crude, Alaskan crude, and foreign crude and multiplying them by the prices of San Joaquin Valley, Alaskan North Slope, and Brent crude oil, respectively.

Crude Oil Prices

January 2016 vs 2015

(Percent Change)

| | |
|--------|-----------|
| WTI | 34% lower |
| Brent | 37% lower |
| CA-RAC | 40% lower |

January 2016 Averages

| | |
|--------|---------|
| WTI | \$31.44 |
| Brent | \$30.34 |
| CA-RAC | \$26.60 |

January 29, 2016

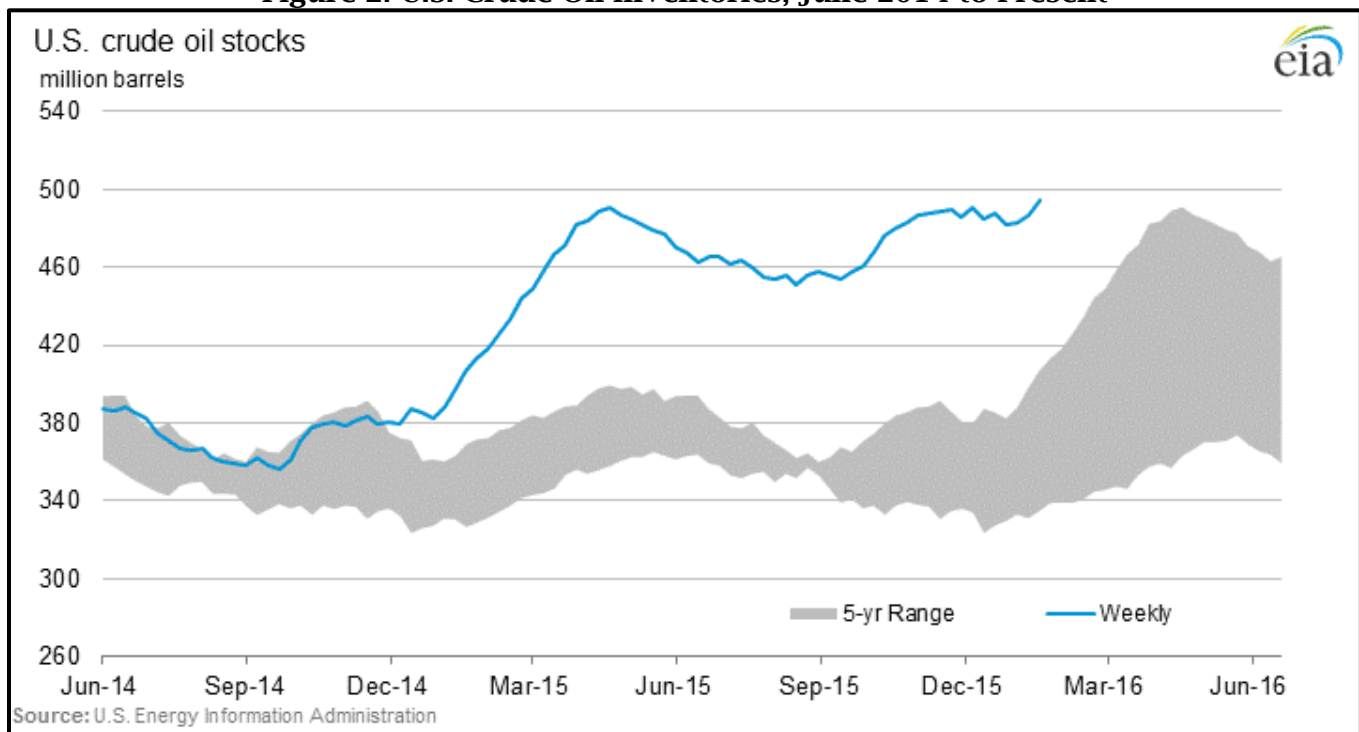
| | |
|--------|---------|
| WTI | \$33.66 |
| Brent | \$33.14 |
| CA-RAC | \$28.07 |

Crude Oil Production and Storage

With the continued fall of crude oil prices, U.S. crude oil inventories remain well above historic norms (See **Figure 2**). According to EIA data, domestic production of crude oil remains strong, keeping prices low and inventories high. In combination with continued high levels of output from the Organization of the Petroleum Exporting Countries (OPEC) producers (see third bullet below), domestic crude oil inventories remain well above historical averages. This overhang of supply should prevent crude prices from rising.

- The U.S. EIA estimate of U.S. crude oil output for January was 9.2 million barrels per day (bpd), same as December, down 4 percent from the weekly production high set on June 5, 2015 (9.6 million bpd).
- Crude oil inventories in the United States have increased slightly in January to 494.9 million barrels at the end of the month. This is 88 million barrels higher than a year ago and over a 100 million barrels higher than 2014.

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

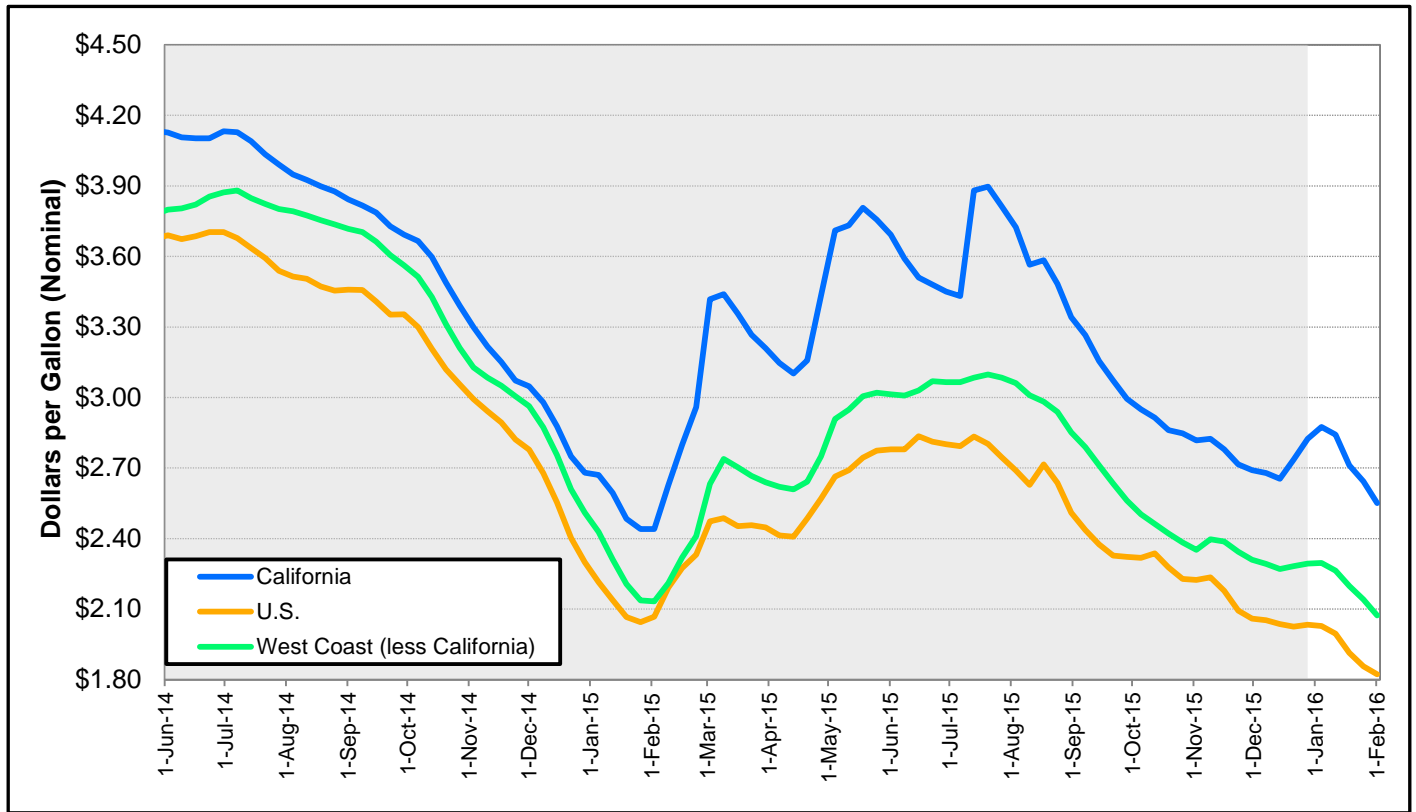


Source: U.S. EIA.

- According to the OPEC *Monthly Oil Market Report January 2016*, OPEC crude oil production has again fallen slightly, from 32.39 million barrels per day (bpd) in November to 32.18 million bpd. Saudi Arabian production decreased 57,000 bpd over the same period, to just under 10.1 million bpd in December. This rate is currently 0.2 percent lower than the 2015 average Saudi Arabian crude oil production rate.

Gasoline and Diesel Retail Prices

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



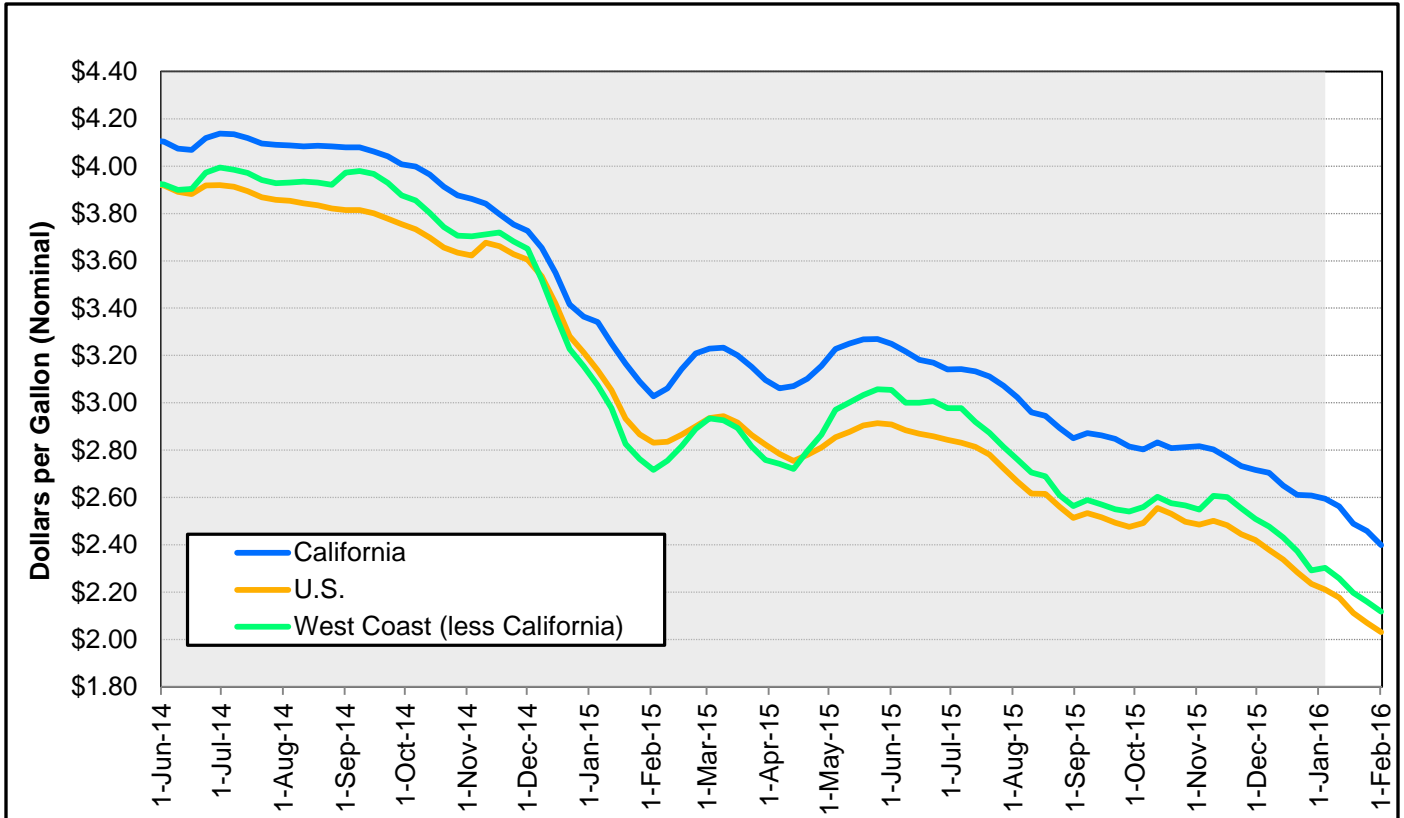
Source: U.S. EIA.

California gasoline prices began to climb in mid-December as a result of the unusually low inventories of gasoline in California (Figure 8). California gasoline prices peaked during the week of January 1, 2016 at \$2.88 before falling to \$2.55 during the week of January 29, 2016 (Figure 3), the lowest price since February 2015. This is likely due to a heavy gasoline import schedule for mid-January and early February to Southern California.

West Coast and U.S. gasoline prices for the month of January continued to steadily decline and reached \$2.07 and \$1.82, respectively, for the week of January 29, 2016. The difference between California and the U.S. gasoline prices reached a high of \$0.84 during the week of January 1, 2016 with California gasoline prices on top. Comparing annual gasoline averages for 2015 and 2014, the average prices for California and the U.S. in 2015 was \$3.17 and \$2.43, compared to 2014 averages of \$3.74 and \$3.36, respectively.

| Gasoline Prices | |
|---------------------------------|-------------------|
| January 2015 vs 2016 | |
| (Percent Change) | |
| California | 20% higher |
| U.S. | 18% lower |
| West Coast | 5% lower |
| January 2015 Averages | |
| California | \$2.72 |
| U.S. | \$1.92 |
| West Coast | \$2.19 |
| Week of January 29, 2015 | |
| California | \$2.55 |
| U.S. | \$1.82 |
| West Coast | \$2.07 |

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



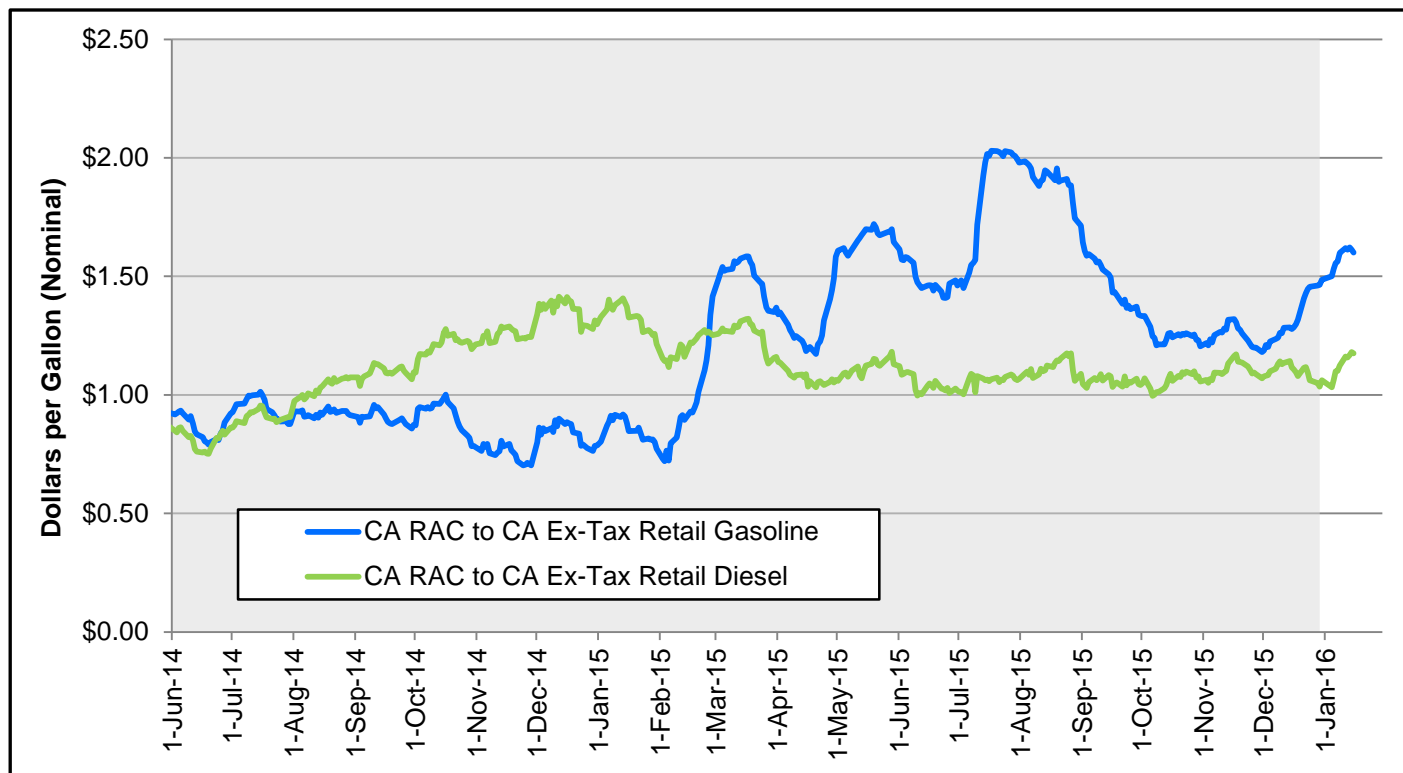
Source: U.S. EIA.

California diesel prices continue to fall, setting a new low at \$2.46 during the week of January 25 (**Figure 4**). Similarly, the U.S. and West Coast were priced at \$2.07 and \$2.16, respectively (**Figure 4**). The price difference between U.S. and California diesel decreased to \$0.39.

U.S. diesel prices for January 2016 are 29 percent less than January 2015 prices, a \$0.85 decrease compared to a year ago. The difference between the average prices for California retail diesel and the West Coast grew \$0.05 from \$0.25 in December 2015 to \$0.30 in January. Average California January 2016 diesel prices are \$0.38 more than the U.S. price. In January 2015, the average California diesel price was just \$0.21 higher than the U.S. diesel price and \$0.30 higher than the West Coast price.

| Diesel Prices | |
|---------------------------------|------------------|
| January 2016 vs 2015 | |
| (Percent Change) | |
| California | 21% lower |
| U.S. | 29% lower |
| West Coast | 23% lower |
| January 2016 Averages | |
| California | \$2.53 |
| U.S. | \$2.14 |
| West Coast | \$2.23 |
| Week of January 25, 2015 | |
| California | \$2.46 |
| U.S. | \$2.07 |
| West Coast | \$2.16 |

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 gasoline margin³ continues rise as crude oil prices fall faster than retail prices for gasoline and diesel. January saw the CA-RAC-to-ex-tax retail margin increase \$0.21 for gasoline and increase \$0.02 for diesel. For January, the CA-RAC-to-ex-tax average margins are \$1.45 and \$1.06 for gasoline and diesel, respectively (Figure 5). Last year, January 2015, the CA RAC-to-ex-tax margins for gasoline and diesel were at \$0.78 and \$1.21 respectively.

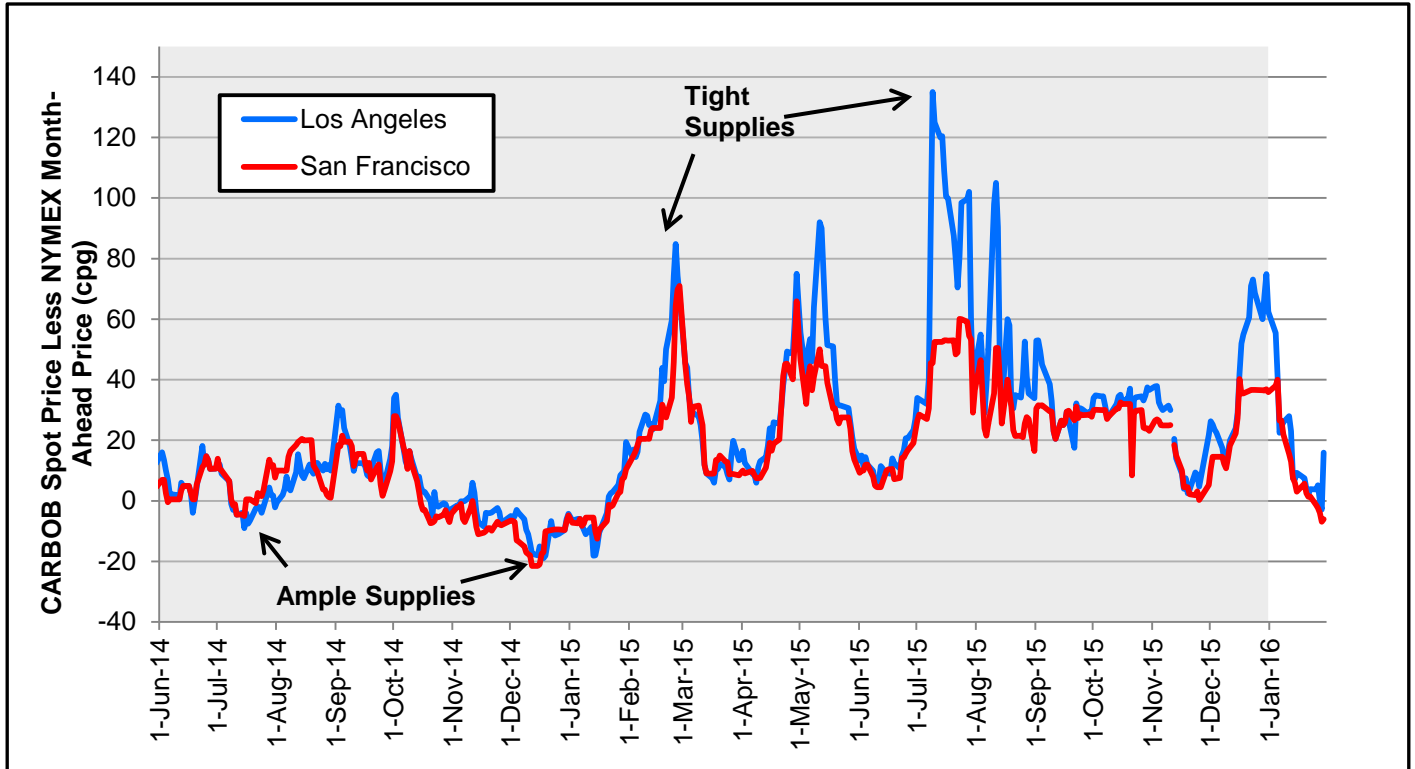
The outage at ExxonMobil’s Torrance refinery continues to keep the gasoline margin elevated when compared to the same time last year (\$0.56 more), as the market struggles to find additional supplies of gasoline.

Historically, demand for both gasoline and diesel will continue to decline until April when Californians ramp up for the summer driving season. Gasoline inventories climbed throughout January (see Figure 8) indicating a rebound in supply.

| <u>Crude to Retail Margins</u> | |
|---|------------|
| <u>January 2016 vs 2015</u> (Percent Change) | |
| Gasoline | 70% higher |
| Diesel | 20% lower |
| <u>January 2016 Averages</u> | |
| Gasoline | \$1.45 |
| Diesel | \$1.06 |
| <u>January 29, 2016</u> | |
| Gasoline | \$1.33 |
| Diesel | \$1.02 |

³ The RAC-to-retail margin refers to the difference between the retail price and the refiners’ acquisition cost for crude oil. Thus, it includes all incremental costs of producing gasoline or diesel. Ex-tax refers to the removal of all taxes on the price of fuel, which is done to remove any distortions from taxes that may affect this calculation.

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS.

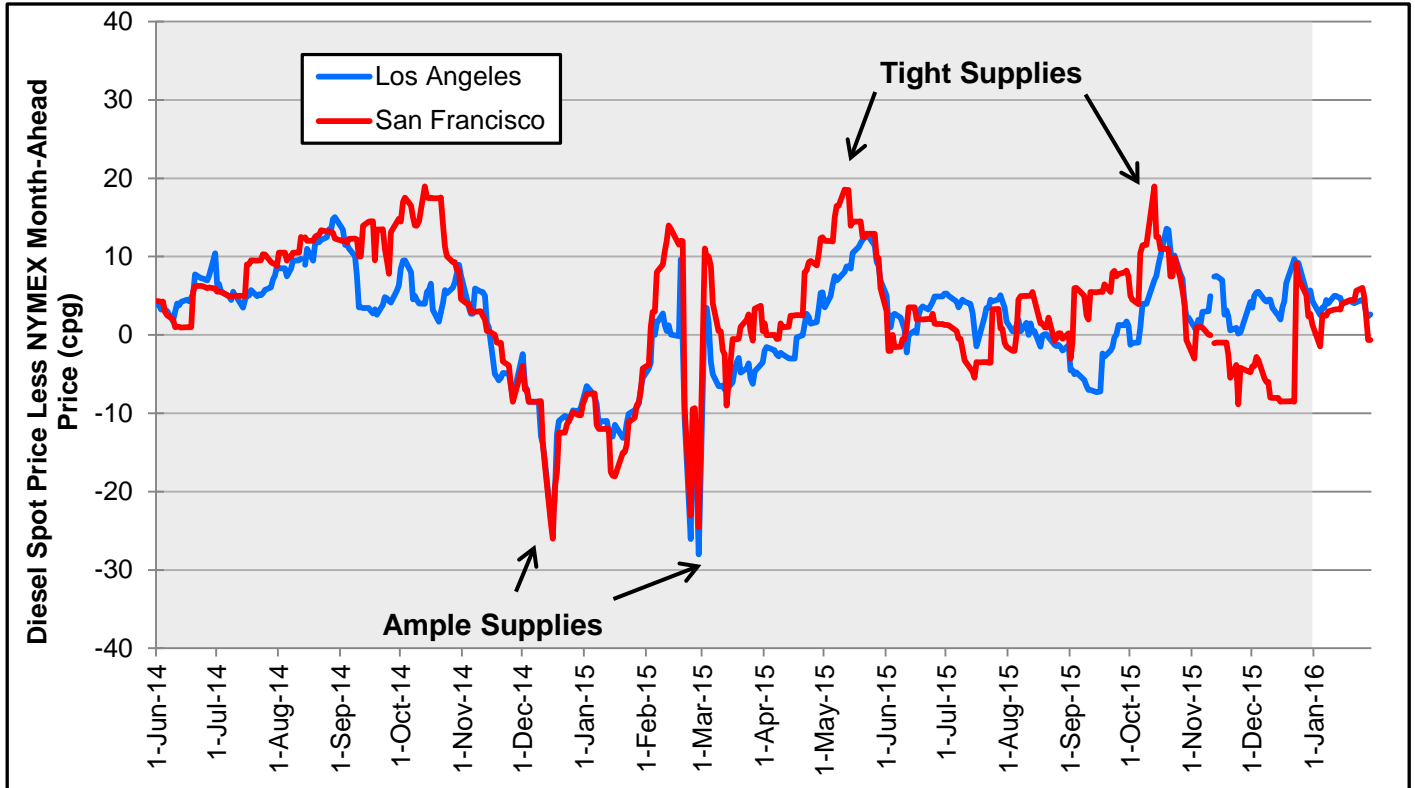
The spread between Los Angeles (LA) spot price and the New York Mercantile Exchange (NYMEX) futures price decreased for most of January (Figure 6). The LA-less-NYMEX spread fell from \$0.55 on January 4 to -\$0.03 below the NYMEX on January 28, but rebounded to \$0.16 on January 29. The monthly average for the LA-less-NYMEX spread decreased \$0.27 from \$0.42 in December 2015 to \$0.15 in January 2016.

The San Francisco-less-NYMEX spot-futures spread reached its lowest since February 2015 at -\$0.06 on January 29. Unlike L.A., San Francisco (SF) stayed below the NYMEX price for the rest of the month. The monthly average for SF-less-NYMEX spread decreased from \$0.26 for December 2015 to \$0.10 for January 2016.

The average five-year differential of LA-less-NYMEX was \$0.13. The same average differential for SF-less-NYMEX was \$0.09, while the combined LA and SF-less-NYMEX five-year differential was \$0.11.

| <u>Gasoline Spot-Futures Spread</u> | |
|-------------------------------------|------------|
| <u>January 2016 vs 2015</u> | |
| (cents) | |
| Los Angeles | 18¢ higher |
| San Francisco | 14¢ higher |
| <u>January 2016 Averages</u> | |
| Los Angeles | 15¢ |
| San Francisco | 10¢ |
| <u>January 29, 2016</u> | |
| Los Angeles | 15¢ |
| San Francisco | -6¢ |

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS.

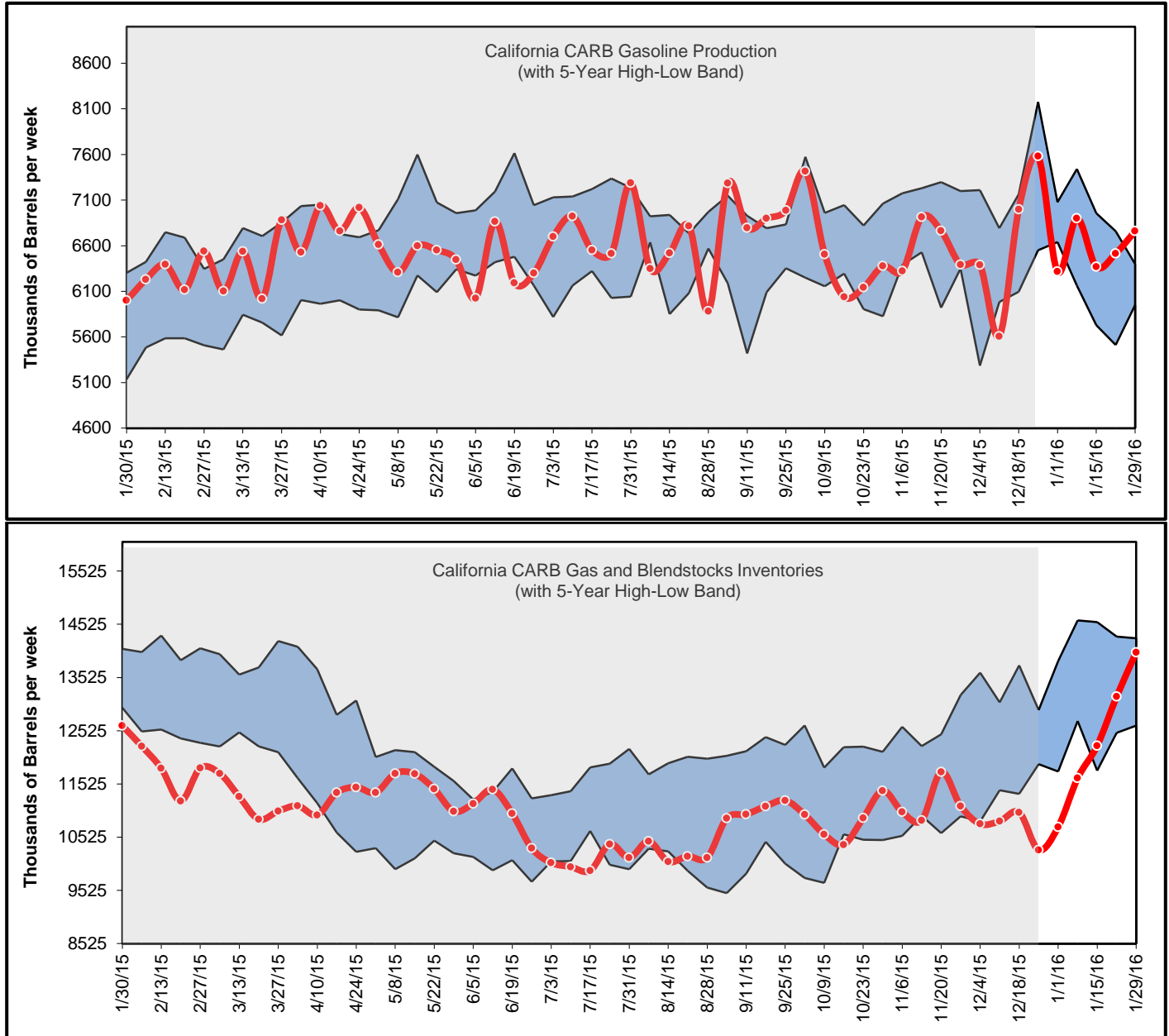
The California diesel spot market remained steady throughout January 2016, after exhibiting moderate volatility in December 2015. LA diesel spot prices have continued to stay above NYMEX since early October 2015. On January 28, prices dropped to the monthly low of \$0.02. The L.A.-less-NYMEX spread hovered over the January average of \$0.04, \$0.01 below the December average and \$0.14 above the average a year ago.

The SF-less-NYMEX spread reached the monthly low of -\$0.01 on January 4 after the swift reversal of spread from -\$0.09 on December 22 to \$0.09 on December 23. SF spot prices remained above NYMEX for January, reaching the monthly high of \$0.06 on January 25 when prices headed downwards hitting the low of \$0.01 again on January 28. The SF-less-NYMEX spread had a monthly average of \$0.03, which is \$0.07 above the December average and \$0.15 above the January 2015 average.

| <u>Diesel Spot-Futures Spread</u> | |
|-----------------------------------|------------|
| <u>January 2016 vs 2015</u> | |
| (cents) | |
| Los Angeles | 14¢ higher |
| San Francisco | 15¢ higher |
| <u>January 2016 Averages</u> | |
| Los Angeles | 4¢ |
| San Francisco | 3¢ |
| <u>January 29, 2016</u> | |
| Los Angeles | 3¢ |
| San Francisco | -1¢ |

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

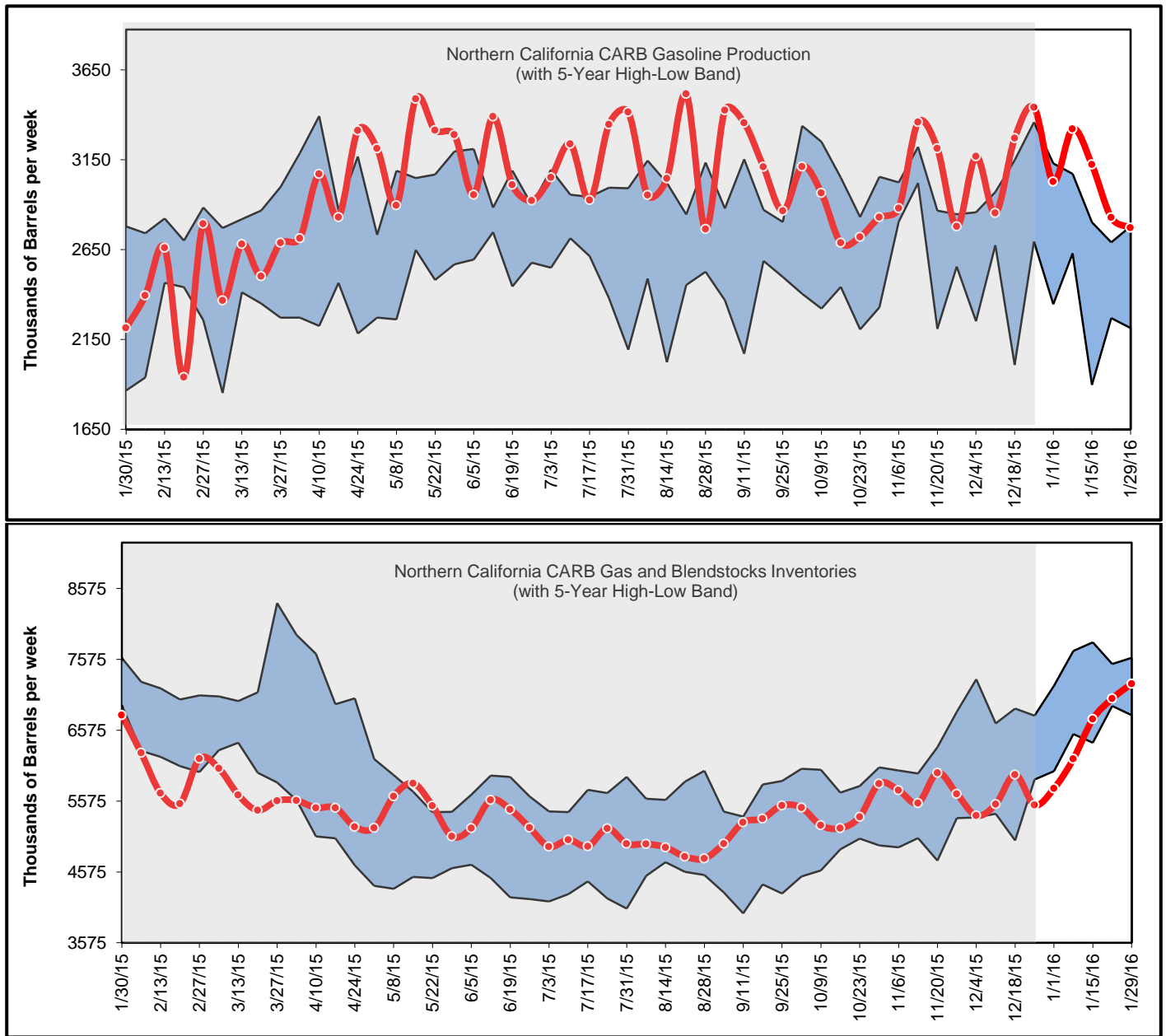


Source: PIIRA data.

On Christmas Day, California gasoline production marked an all-year high for 2015 (**Figure 8**). Production has since dropped 1.07 million barrels per week (bpw) from 7.58 million bpw on December 25, 2015 to 6.76 million bpw on January 29, 2016. However, production stayed within the five-year high-low band, 761,000 bpw of gasoline more than last year (January 30, 2015).

Meanwhile, inventory levels have increased five consecutive weeks from 10.28 million barrels on December 25, 2015 to 13.99 million barrels on January 29, 2016 (**see Figure 8**). The upward slope of the historical five-year band shows a regular history of inventory gains during the months of December and January.

Figure 9: Northern California Gasoline Production and Inventories

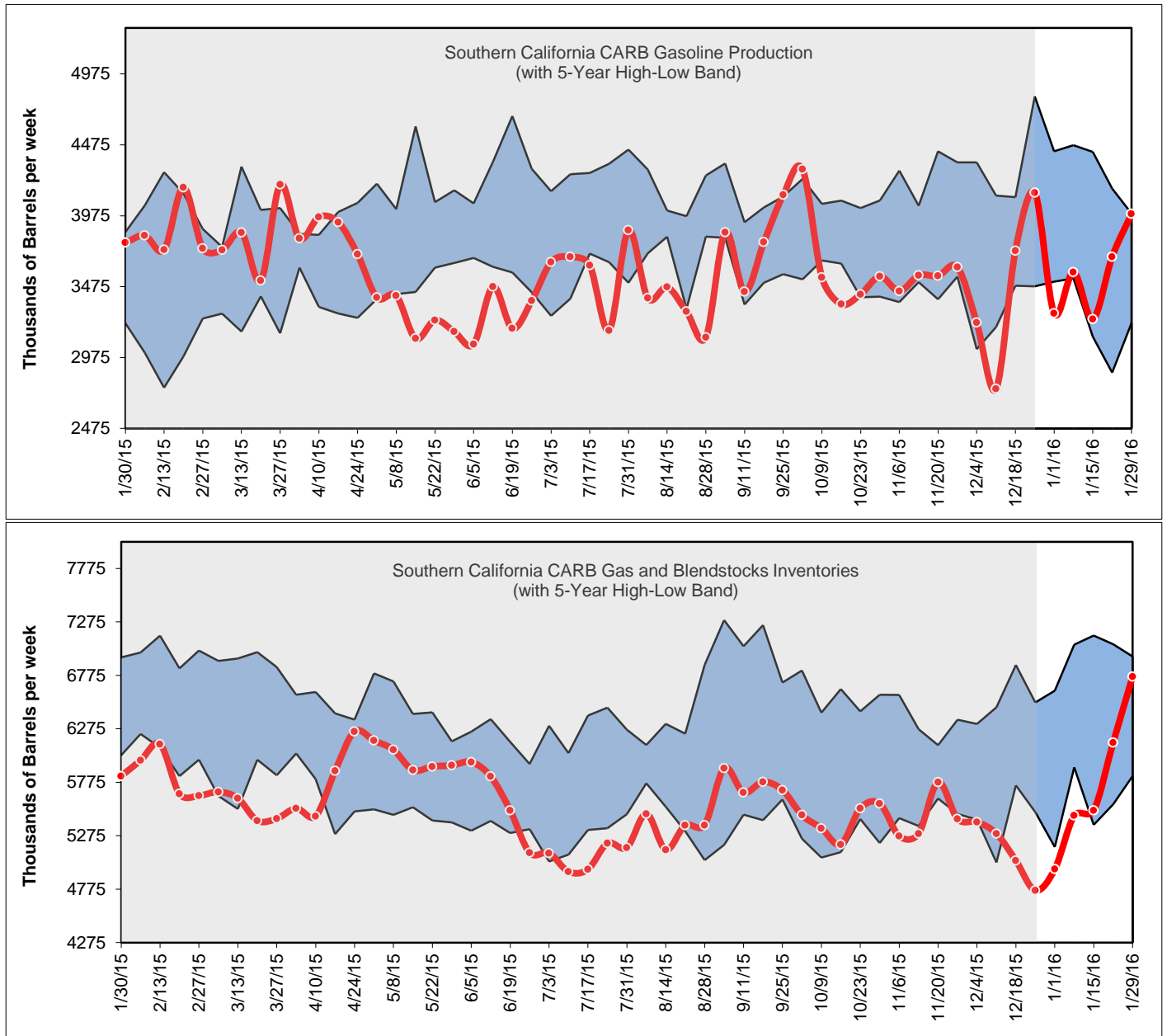


Source: PIIRA data.

Northern California gasoline production remains above the five-year band (see Figure 9). On January 29, refineries produced 2.77 million bpw of gasoline; this rate is 560,000 bpw more than the same time last year.

From Christmas Day 2015 to New Year Day 2016, northern California’s inventory levels held slightly below the five-year band. But by the end of January, inventories rose to the middle of the five-year band (see Figure 9), finishing at 7.23 bpw on the week of January 29, 2016.

Figure 10: Southern California Gasoline Production and Inventories

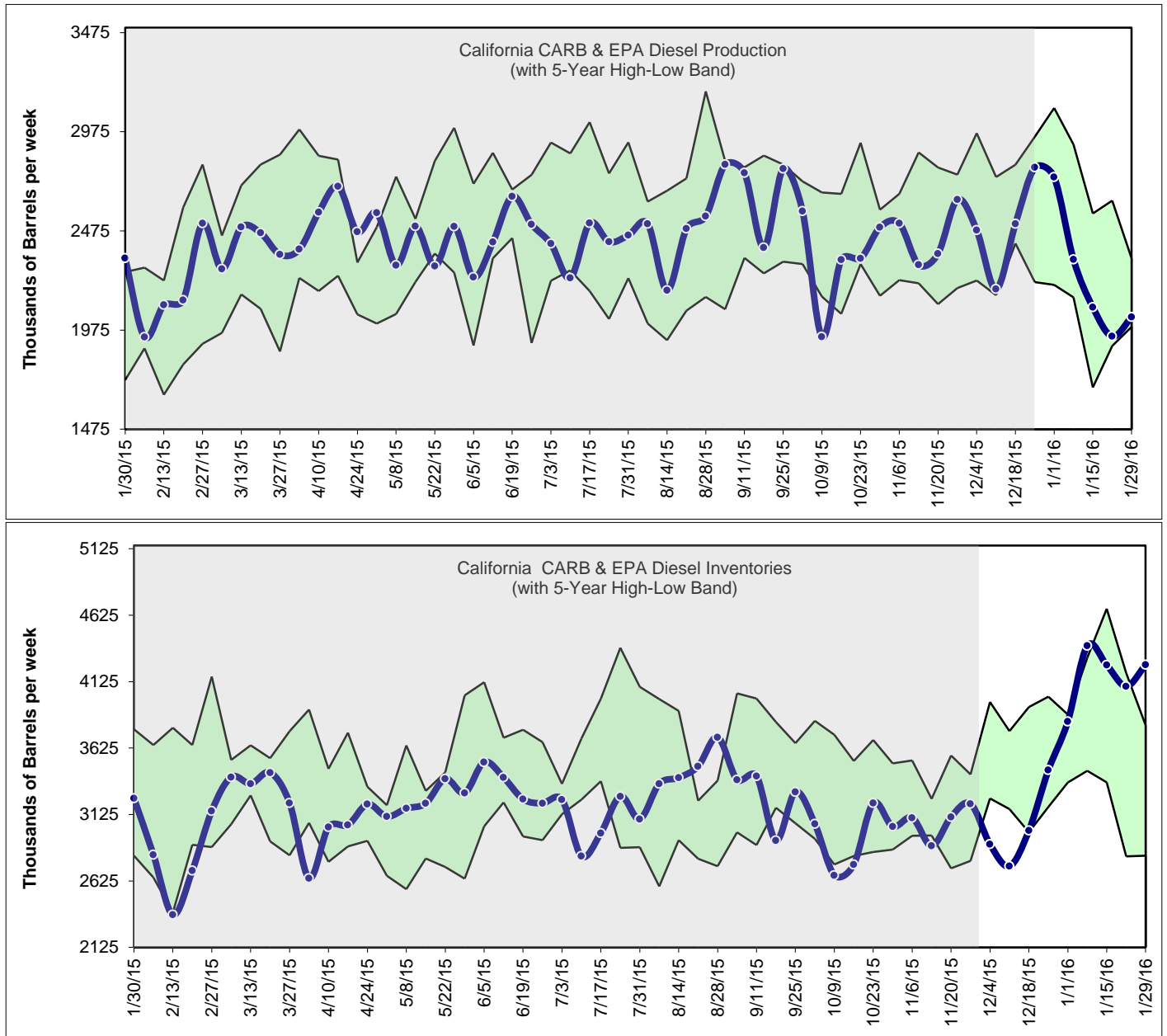


Source: PIIRA data.

On New Year’s Day 2016, gasoline production in southern California was below the five-year band at 3.29 million bpw compared to 3.65 million bpw during the same time in 2015. It recovered four weeks later, climbing back to the top of the five-year band at 3.99 million bpw on January 29, 2016.

Since the ExxonMobil Torrance refinery shutdown on February 2015, southern California inventory levels have averaged 5.54 million barrels. But in January, gasoline inventories managed to increase by 2 million barrels to 6.76 million barrels on January 29, 2016 up from 4.76 million barrels on December 25, 2015 (see Figure 10).

Figure 11: Diesel Production and Inventories



Source: PIIRA data.

On the week ending January 22, 2016, diesel production fell 750,000 bpw to 2.04 million bpw, the lowest rate in a year at since February 6, 2015 (see **Figure 11**). Shell Martinez and Tesoro Martinez refineries experienced outages on January 12 and January 21, respectively, likely contributing to this reduction.

From December 25, 2015 to January 29, 2016, diesel inventory levels have increased 793,000 barrels to 4.25 million barrels. Also, inventory levels reached a new 2016 high on January 8 at 4.4 million barrels per week. Thus, while production fell in January, the California diesel market still appears well supplied.