Recent Trends for Retail Gasoline and Diesel Fuel Prices

Petroleum Market Advisory Committee Meeting
February 10, 2015

Berkeley, California

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Purpose

• Provide information to PMAC about how retail prices are trending

• Provide preliminary CEC analysis of retail prices in the context of Fuels Under the Cap

• Seek PMAC input and discussion about preliminary estimates, how to analyze the impact of Fuels Under the Cap, and next steps
California’s transportation fuels market is nearly self-sufficient, so imports from outside of California are not routinely needed to balance out supply with demand

- Imports normally account for only 3 to 6 percent of supply

The California market is geographically isolated from other locations in the United States that produce refined products

Pipelines connect California refining centers to distribution terminals in Nevada and Arizona, but these pipelines only operate in one direction – sending gasoline and other transportation fuels to these neighboring states

California market is isolated by time and distance from alternative sources of re-supply during unplanned refinery outages
Western States – Fuel Flows

1 Foreign Imports into Northern California
2 Foreign Imports into Southern California
3 US Gulf Coast Imports into Northern California
4 US Gulf Coast Imports into Southern California
5 Ship/barge - San Francisco to Los Angeles
6 Ship/barge - San Francisco to Portland
7 Ship/barge - Washington to San Francisco and Los Angeles
8 Kinder Morgan - San Francisco to Chico
9 Truck - Chico into Southern Oregon
10 Kinder Morgan - San Francisco to Reno
11 Kinder Morgan - San Francisco to Fresno
12 Kinder Morgan - Bakersfield to Fresno
13 Truck - Imperial Terminal to Western Arizona
14 Kinder Morgan - Los Angeles to Las Vegas
15 Kinder Morgan - Los Angeles to San Diego
16 Kinder Morgan - Los Angeles to Imperial
17 Kinder Morgan - Los Angeles to Phoenix
18 Kinder Morgan - El Paso to Phoenix
19 Kinder Morgan - El Paso to Tucson
20 Longhorn Pipeline (Magellan Midstream Partners, L.P.)
21 Ship/barge - San Francisco to Eureka
22 UNEV - Salt Lake City to Las Vegas
23 Foreign Exports from Southern California
24 Foreign Exports from Northern California
California has one of the more expensive retail gasoline and diesel fuel prices in the United States.

There are three reasons why California retail prices are more expensive:

- Greater tax burden,
- Higher production costs, and
- An isolated market.

Since January of 2001, annual average prices are at least:

- 17 cents per gallon higher than the average U.S. retail gasoline price
- 12 cents per gallon higher than the average U.S. retail diesel price

Between 2009 and 2014, differentials have averaged:

- 35.2 cents per gallon higher for gasoline
- 19.9 cents per gallon higher for diesel fuel
Retail Gasoline Price Differences
California Less U.S. Average

Sources: California Energy Commission analysis of Energy Information Administration data.

Regular grade gasoline

Cents Per Gallon

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<td>29.5</td>
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Retail Diesel Fuel Price Differences
California Less U.S. Average

Y-T-D data through February 2, 2015

Sources: California Energy Commission analysis of Energy Information Administration data.
The amount of tax levied on a gallon of gasoline in California is usually higher than nearly every other state.

As of January 1, 2015, California retail gasoline taxes accounted for 63.8 cents per gallon.

The U.S. average was 48.3 cents per gallon so California’s retail gasoline tax burden was 15.0 cents per gallon higher than the U.S. average.

Source: American Petroleum Institute
The amount of tax levied on a gallon of diesel fuel in California is usually higher than nearly every other state.

As of January 1, 2015, California retail diesel fuel taxes accounted for 65.0 cents per gallon.

The U.S. average was 54.4 cents per gallon so California’s retail gasoline tax burden was 10.6 cents per gallon higher than the U.S. average.

Source: American Petroleum Institute
Fuels-Under-the-Cap (FUTC) Tracking

• Fuels-Under-the-Cap regulation went into effect January 1, 2015
• The Oil Price Information Service (OPIS) calculates a value for the FUTC obligation each business day, California Cap-at-the-Rack (CAR)
• Assessment valuation uses price of carbon x carbon intensity of the transportation fuel
  • Winter CARB reformulated gasoline with 10 percent ethanol
  • Summer CARB reformulated gasoline with 10 percent ethanol
  • CARB diesel fuel
• Majority of fuel providers have elected to use the daily OPIS CAR calculation for inclusion in their bills of lading at the distribution terminal
  • Either as a line item or embedded in the price
• Some marketers are calculating their own FUTC assessment and including in the overall price of the fuel
Fuels-Under-the-Cap (FUTC) Tracking

- Assuming a California Carbon Allowance price of $11.80/mt
- CAR calculation for 1 gallon of **winter CARB gasoline** delivered at the rack would be:
  - \[ \text{CAR} = (((0.00891 \times 0.9) \times 11.80) + ((0.00022 \times 0.1) \times 11.80)) \times 100 \]
  - \[ \text{CAR} = 9.488\text{cts/gal} \]
- CAR calculation for 1 gallon of **summer CARB gasoline** delivered at the rack would be:
  - \[ \text{CAR} = (((0.00893 \times 0.9) \times 11.80) + ((0.00022 \times 0.1) \times 11.80)) \times 100 \]
  - \[ \text{CAR} = 9.510\text{cts/gal} \]
- CAR calculation for 1 gallon of **CARB diesel** delivered at the rack would be:
  - \[ \text{CAR} = (0.01024 \times 11.80) \times 100 \]
  - \[ \text{CAR} = 12.083\text{cts/gal} \]
Fuels-Under-the-Cap (FUTC) Tracking

- Energy Commission staff have been monitoring daily fuel prices
  - Refinery wholesale or “spot” prices
    - San Francisco, Los Angeles and Pacific Northwest
  - Retail prices in several states
    - California, Washington, Oregon, Nevada, Arizona, Texas, Illinois, Florida
- When prices are declining due to a drop in crude oil it is more difficult to observe an impact of an FUTC assessment being passed through to retail
  - One approach is to examine the difference in retail prices between California and other locations to see if a change has occurred and been sustained
  - Also helpful to examine regional refinery markets for potential changes in scarcity or relative abundance of supply
Retail **Gasoline** Price Differences
California vs. United States and Selected States

California retail gasoline price premium to U.S. has decreased **0.7 cpg** between 12/31/14 and 2/5/15.

- Premium to **Washington** has increased **24.5 cpg**.
- Premium to **Oregon** has increased **22.4 cpg**.
- Premium to **Nevada** has increased **10.7 cpg**.
- Premium to **Arizona** has increased **8.7 cpg**.

Source: CEC analysis of AAA prices.
Retail **Gasoline** Price Differences
Comparison of Western States

- **Washington** premium to **Oregon** has decreased **2.1 cpg**.
- **Washington** premium to **Nevada** has decreased **14.1 cpg**.
- **Washington** premium to **Arizona** has decreased **15.8 cpg**.
- **Nevada** premium to **Arizona** has decreased **1.7 cpg**.

Source: CEC analysis of AAA prices.

WA and OR markets behave in similar fashion, as do NV and AZ. More rapid drop in WA prices suggests an over-supplied market.
Retail Diesel Fuel Price Differences
California vs. United States and Selected States

OPIS FUTC assessment for diesel fuel has averaged 13 cpg thru 2/5/15.

California retail diesel fuel price premium to U.S. has increased 9.9 cpg between 12/31/14 and 2/5/15.

Premium to Washington has increased 17.4 cpg.
Premium to Oregon has increased 16.1 cpg.
Premium to Nevada has increased 7.3 cpg.
Premium to Arizona has increased 15.5 cpg.

Source: CEC analysis of AAA prices.
Retail **Diesel Fuel** Price Differences
Comparison of Western States

WA and OR markets behave in similar fashion, less so for NV and AZ. More rapid drop in WA prices in NV but not AZ suggests mixed supply conditions in Western region.

Source: CEC analysis of AAA prices.

- **Washington premium to Oregon** has decreased **1.3 cpg**.
- **Washington premium to Nevada** has decreased **10.1 cpg**.
- **Washington premium to Arizona** has decreased **1.9 cpg**.
- **Nevada premium to Arizona** has increased **8.2 cpg**.
Retail Fuel Price Tracking Observations

• **Gasoline**
  - The gap between California retail gasoline prices and other Western states has increased between 8.7 and 24.5 cents per gallon from December 31, 2014 to February 5, 2015
  - The calculated FUTC assessment by OPIS has averaged 10 cents per gallon over the same period and lies within the range of increased retail price differential

• **Diesel Fuel**
  - The gap between California retail diesel fuel prices and other Western states has increased between 7.3 and 17.4 cents per gallon from December 31, 2014 to February 5, 2015
  - The calculated FUTC assessment by OPIS has averaged 13 cents per gallon over the same period and lies within the range of increased retail price differential