



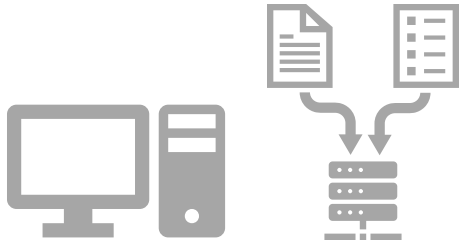
# California Gasoline Supply Constraints and Potential Solutions

California Energy Commission and Division of Petroleum Market Oversight

September 19, 2024



# SB X1-2 Implementation Activities



Data Collection & Monitoring (started on June 26)

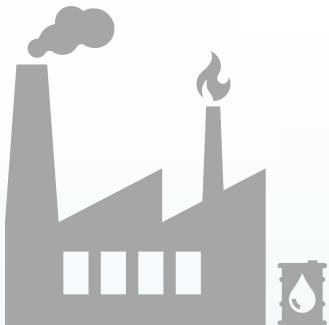


Market Manipulation Analysis (to be developed under new division)



**Transportation Fuels Assessment**

**Today's Topic**



Refinery Maintenance Monitoring (started on June 26)



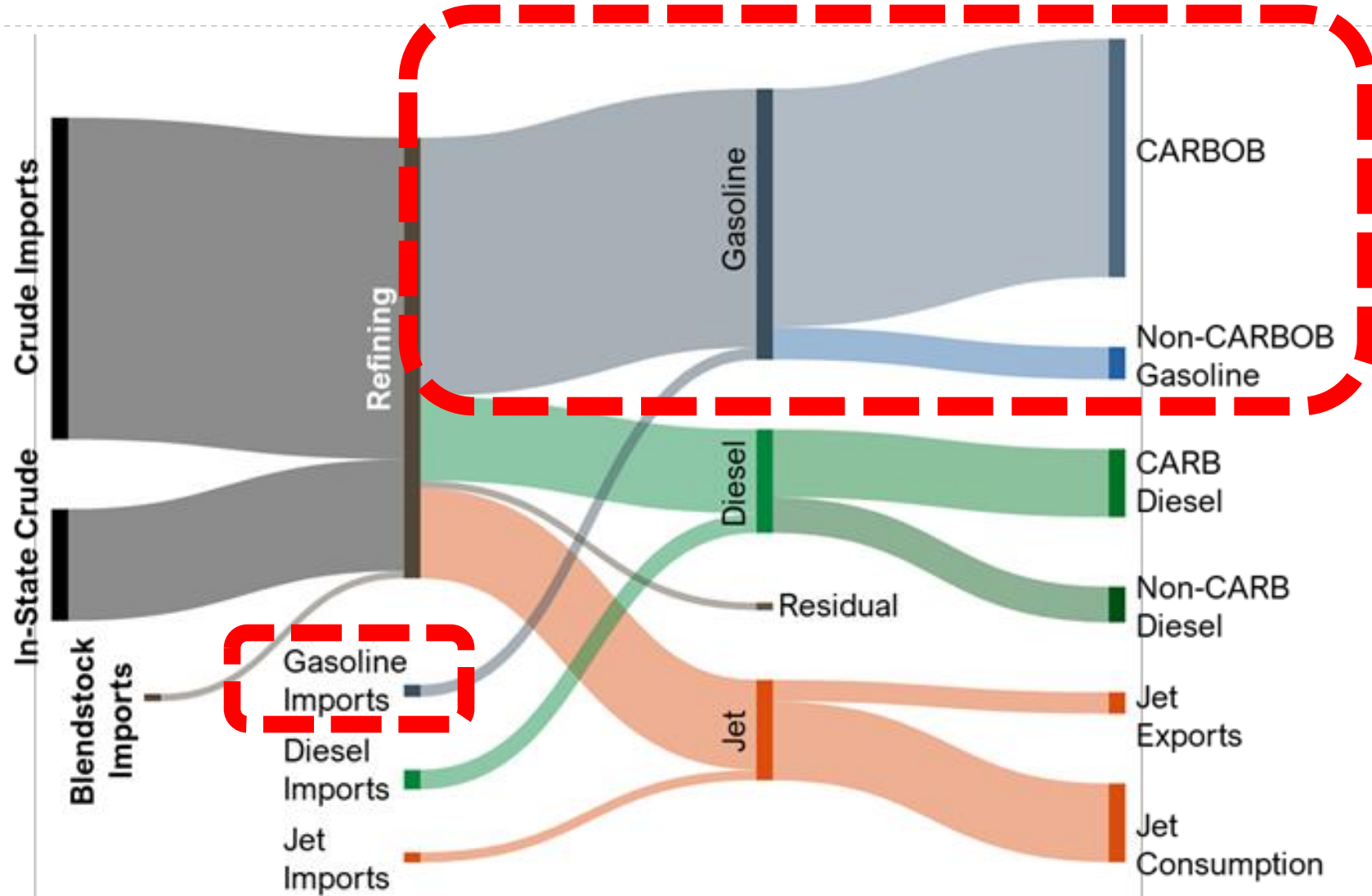
Refining Margin Establishment and Penalty Determination (in progress)



Fuels Transition Plan (in development with CARB)



# Transportation Fuels in California



Source: Transportation Fuels Assessment

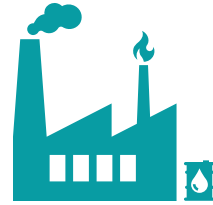


# Understanding Supply and Demand

## SUPPLY



Gasoline Inventories



Refinery Production



Marine Imports

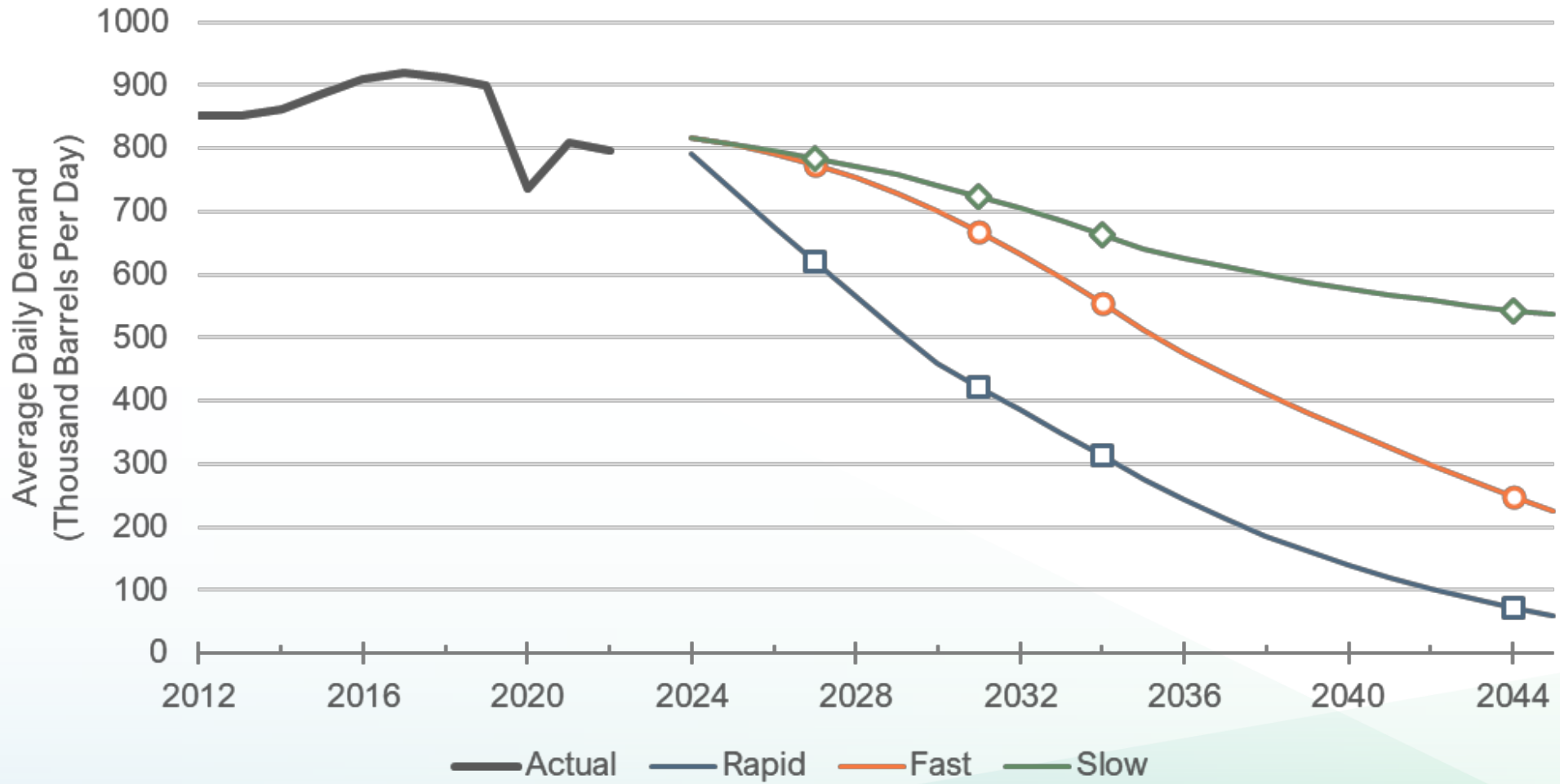
## DEMAND



Gasoline Demand

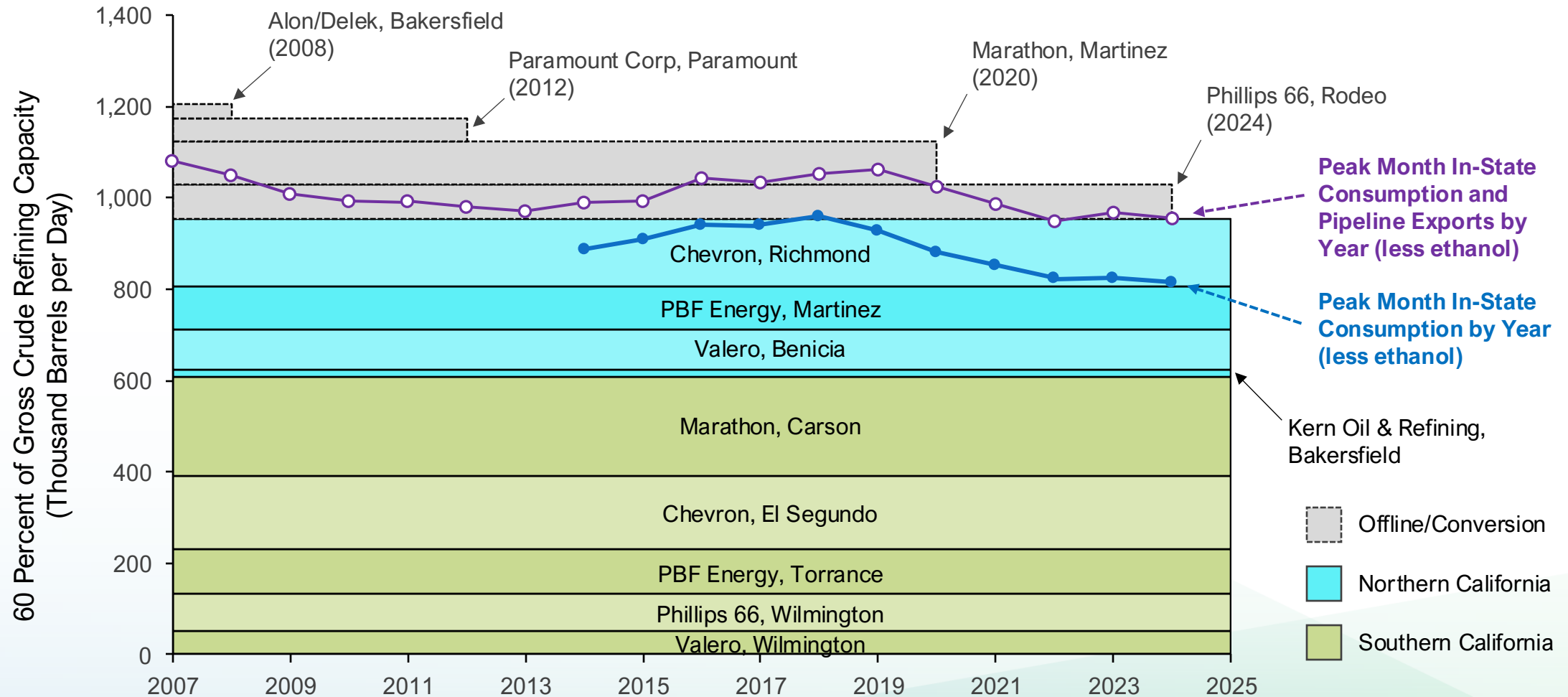


# Gasoline Consumption and Demand Scenarios for the Assessment





# Estimated Gasoline Refinery Capacity

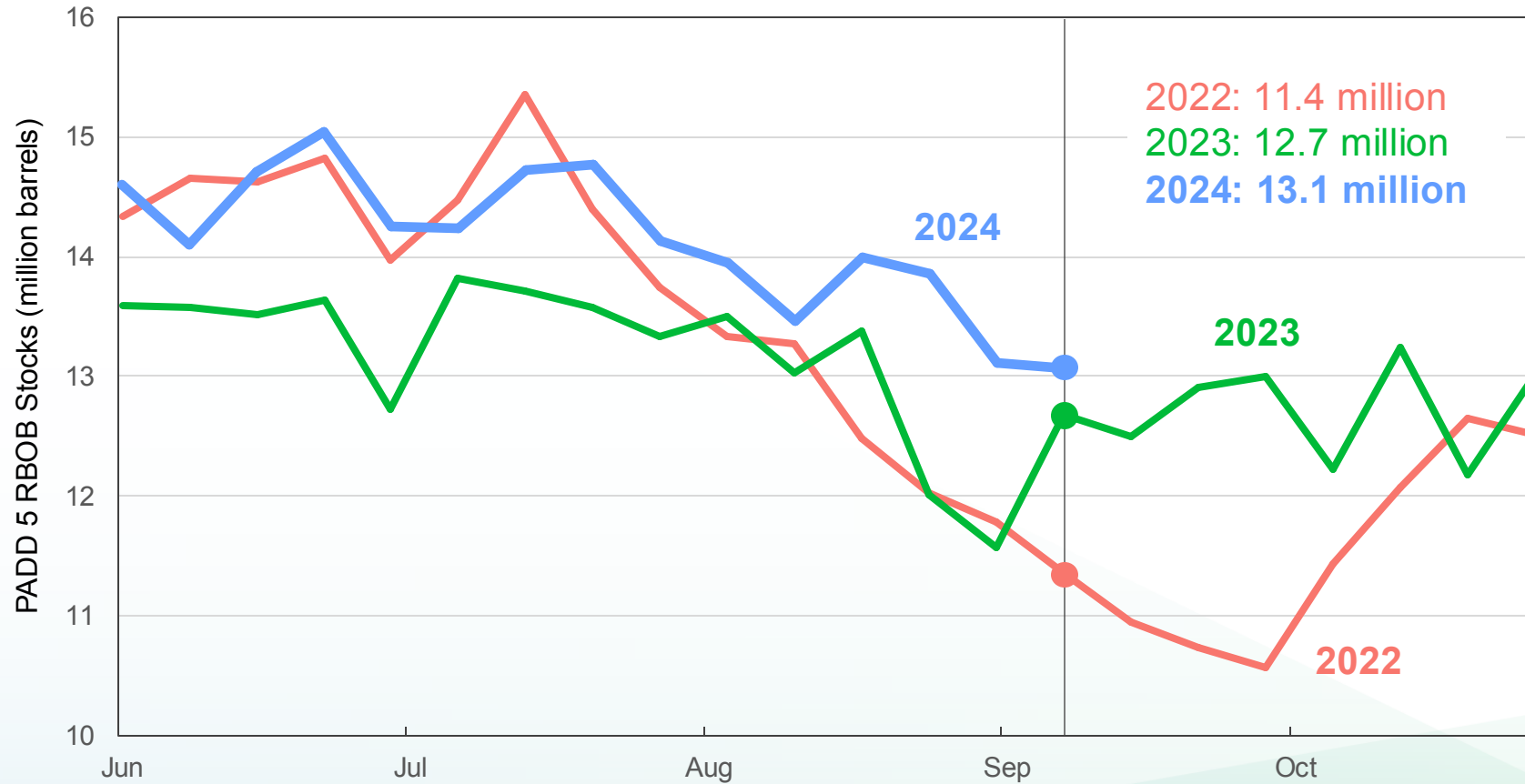


Source: CEC Staff, CDTF



# West Coast Gasoline (RBOB) Stocks

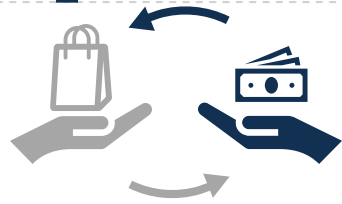
## Weekly Summer Gasoline Stocks (2022-2024)



Source: Gasoline stocks from EIA [West Coast \(PADD 5\) Stocks of Crude Oil and Petroleum Products \(eia.gov\)](https://www.eia.gov)



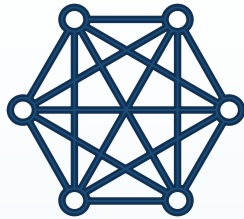
# Transportation Fuels Assessment: Option Summary



Demand  
Strategy



Supply  
Strategy



Highly  
Complex



Other

1. Enhanced ZEV Access
2. VMT Reduction Strategies
3. Fuel Conservation
4. Storage Strategies
5. Production Enhancement Strategies
6. Alignment of Gasoline Specifications for Western States
7. Import Strategies
8. Gas Price Stabilization Fund
9. Cost of Service Model
10. State-Owned Refineries
11. Retail Margin Management
12. Railcar Replenishment





# How Does the NYMEX Price Move to the Retail Price?

## The Fuel Price Influence Chain



© OPIS by IHS Markit

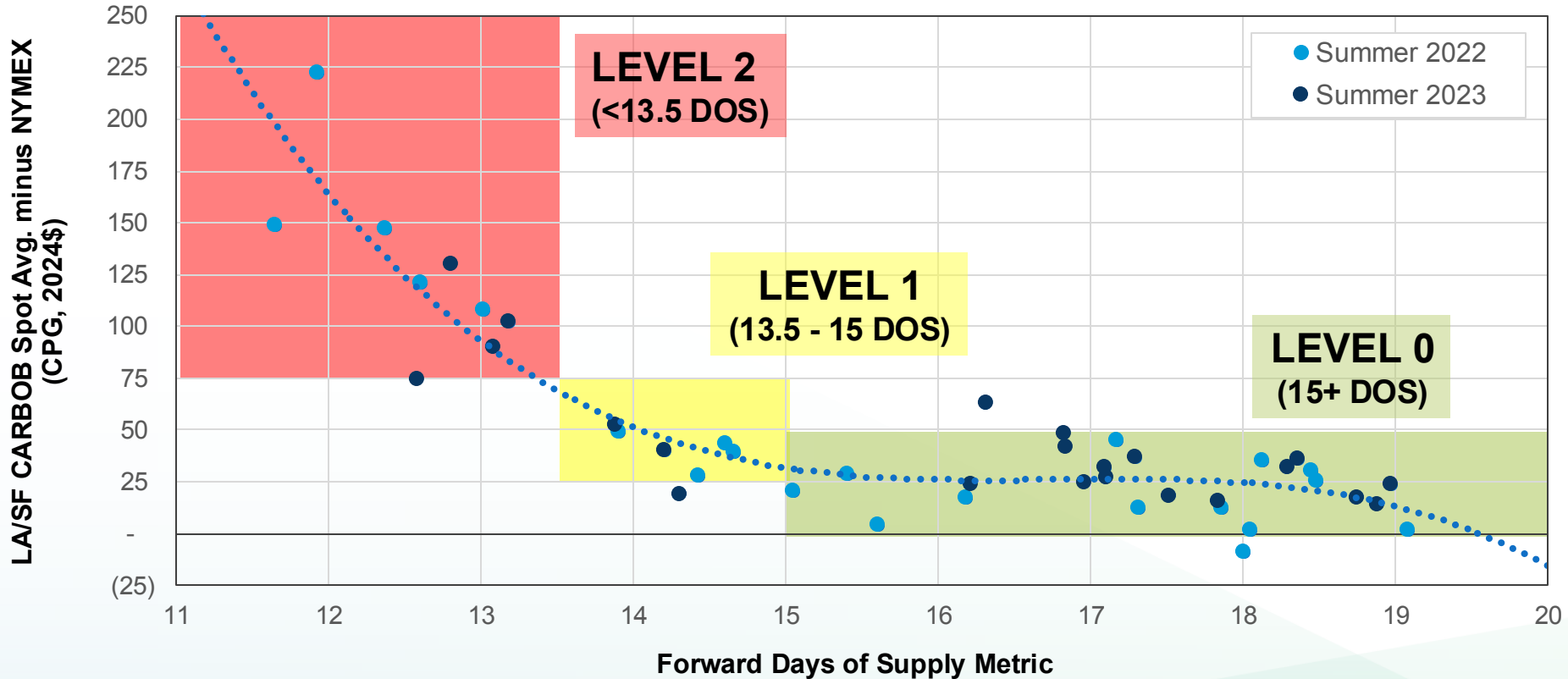
Source: <https://info.opisnet.com/fuel-buying-101-ebook-wholesale-rack>



# Days of Supply (Understanding Market Liquidity)

Summer 2022 and 2023 Price Spread vs. Days of Supply

↑  
...Price spreads increase



← As Days of Supply fall...



**DIVISION OF PETROLEUM  
MARKET OVERSIGHT**

# **A Seller's Market: The Challenge of Market Concentration and Price Spikes**

**Tai S. Milder**

Director, Division of Petroleum Market Oversight



“In California, just six companies account for more than 90 percent of California's refining capacity, and these same six companies control more than 90 percent of the gasoline sold in California.”

“Our concern is that high gas prices in California are the result of low competition in the market.”

**California Attorney General Lockyer  
November 1999**



# California's Top 4 Producers Control 90% of State's Refining Capacity

C4 Concentration Ratio for California and Rest of U.S. Refining Sector

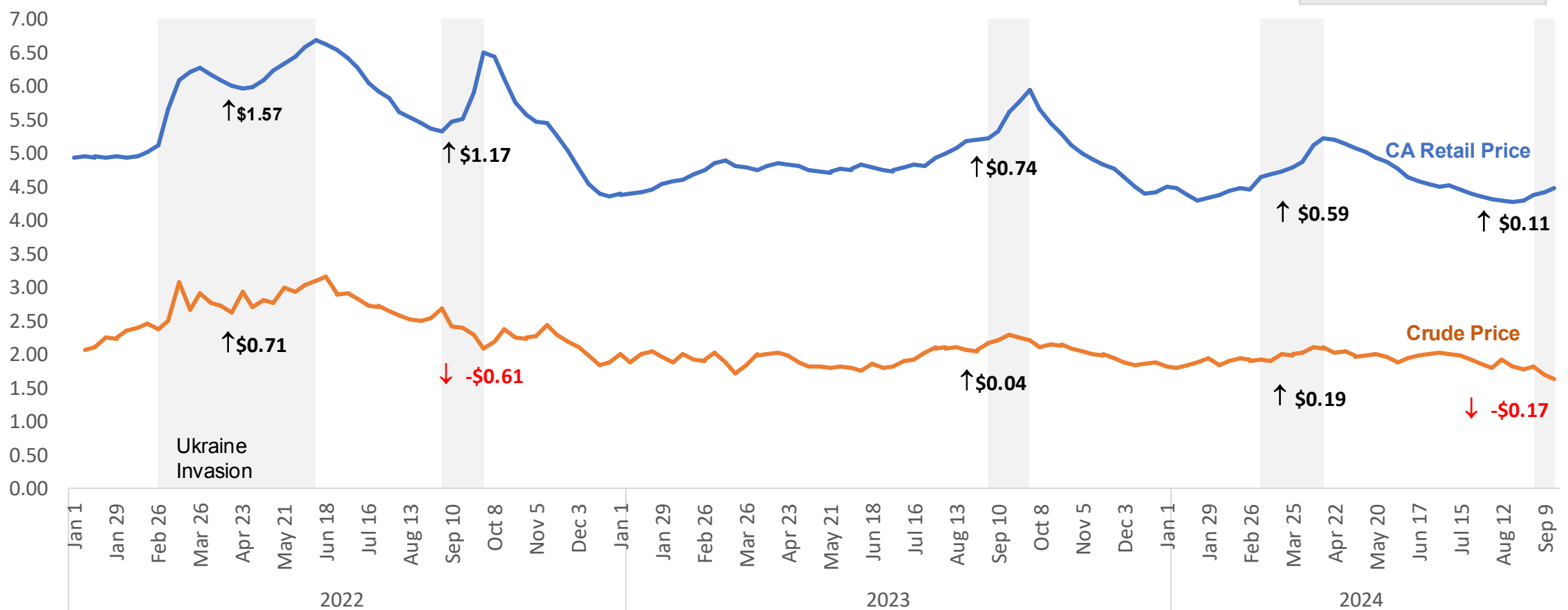
Company	Total Crude Refining Capacity (BPD)	Percent of Total Crude Oil Refining Capacity	Cumulative Share of Refining Capacity
Chevron (El Segundo, Richmond)	514,271	32.4%	32%
Marathon (Los Angeles)	363,000	22.8%	55%
PBF (Torrance, Martinez)	316,400	19.9%	75%
Valero (Wilmington, Benicia)	230,000	14.5%	90%
Phillips 66 (Los Angeles)	139,000	8.7%	98%
Kern (Bakersfield)	26,000	1.6%	100%
Total California Refineries	1,588,671		
<b>Refining Capacity Controlled by Top 4 Refiners in the Rest of U.S.</b>			<b>45%</b>

Notes and Sources: CEC California Refineries, U.S. EIA. Table includes California refineries with CARB Gasoline capacity, excludes refineries that do not produce CARB Gasoline and the Phillips 66 Rodeo facility, which converted to renewable fuel in March 2024.



# California Price Spikes Not Consistent with Crude Oil Costs, National Prices

Retail Prices and Cost of Crude, 2023\$/Gallon

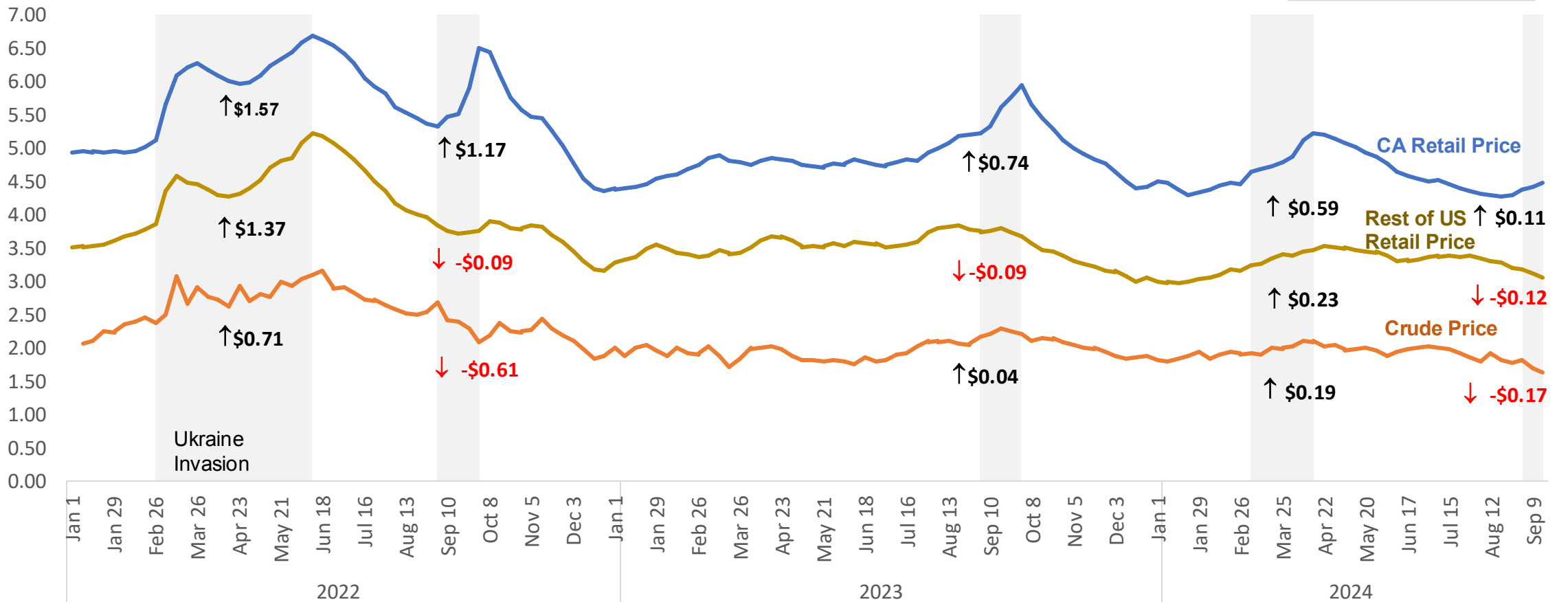


Notes and Sources: Shaded regions highlight time periods with sustained price increases. Retail prices from EIA. Cost of crude (Alaska North Slope) from Alaska Dept of Revenue. Price deflator from BLS, Consumer Price Index for all goods excluding energy.



# California Price Spikes Not Consistent with Crude Oil Costs, National Prices

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Notes and Sources: Shaded regions highlight time periods with sustained price increases. Retail prices from EIA. Cost of crude (Alaska North Slope) from Alaska Dept of Revenue. Price deflator from BLS, Consumer Price Index for all goods excluding energy.

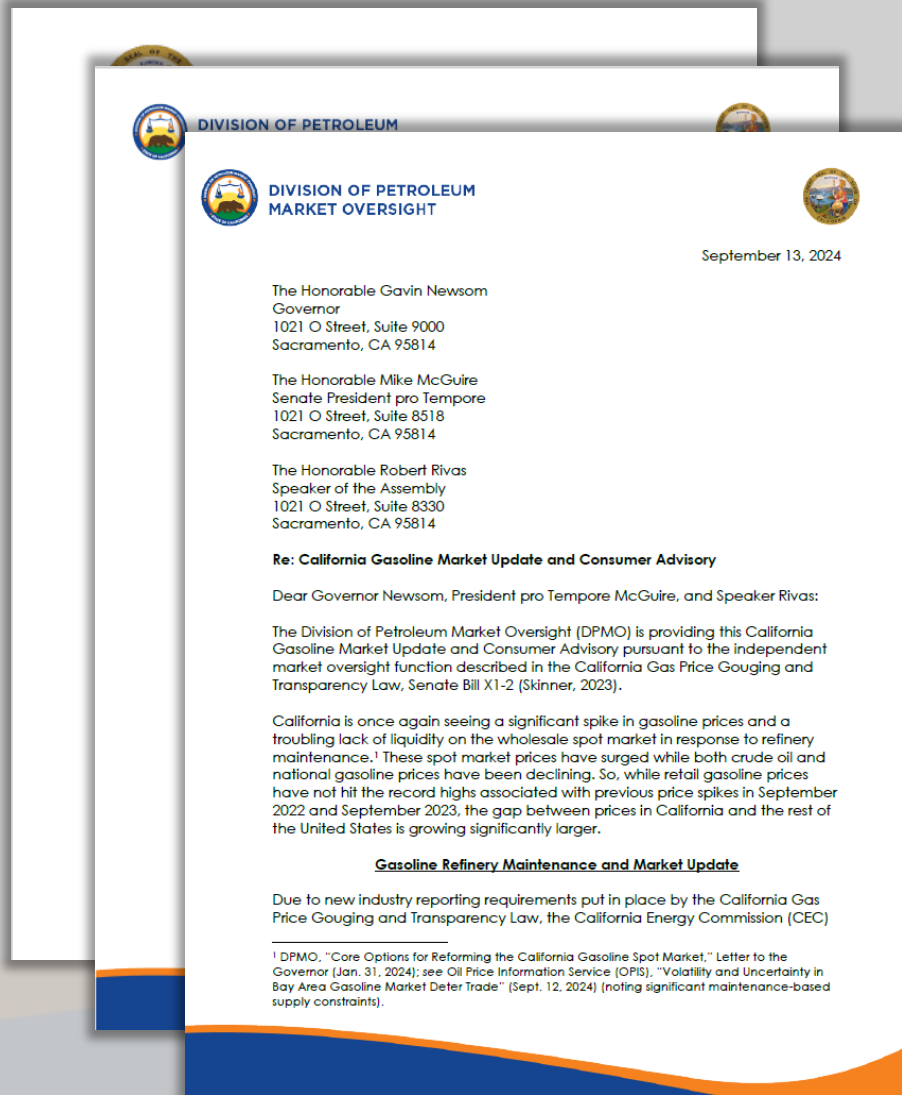


# DPMO's Public Letters have Flagged Key Issues

- ✓ Sept. 2023: *Interim Update on California's Gasoline Market*
- ✓ Jan. 2024: *Core Options for Reforming the Spot Market*
- ✓ Sept. 2024: *Market Update and Consumer Advisory*

As part of consumer protection and market oversight function, DPMO has consistently flagged root causes for price spikes:

- ❖ Low inventory levels for busy driving periods
- ❖ Inadequate resupply during maintenance
- ❖ Lack of liquidity on the spot market



DIVISION OF PETROLEUM

DIVISION OF PETROLEUM  
MARKET OVERSIGHT

September 13, 2024

The Honorable Gavin Newsom  
Governor  
1021 O Street, Suite 9000  
Sacramento, CA 95814

The Honorable Mike McGuire  
Senate President pro Tempore  
1021 O Street, Suite 8518  
Sacramento, CA 95814

The Honorable Robert Rivas  
Speaker of the Assembly  
1021 O Street, Suite 8330  
Sacramento, CA 95814

**Re: California Gasoline Market Update and Consumer Advisory**

Dear Governor Newsom, President pro Tempore McGuire, and Speaker Rivas:

The Division of Petroleum Market Oversight (DPMO) is providing this California Gasoline Market Update and Consumer Advisory pursuant to the independent market oversight function described in the California Gas Price Gouging and Transparency Law, Senate Bill X1-2 (Skinner, 2023).

California is once again seeing a significant spike in gasoline prices and a troubling lack of liquidity on the wholesale spot market in response to refinery maintenance.<sup>1</sup> These spot market prices have surged while both crude oil and national gasoline prices have been declining. So, while retail gasoline prices have not hit the record highs associated with previous price spikes in September 2022 and September 2023, the gap between prices in California and the rest of the United States is growing significantly larger.

#### Gasoline Refinery Maintenance and Market Update

Due to new industry reporting requirements put in place by the California Gas Price Gouging and Transparency Law, the California Energy Commission (CEC)

<sup>1</sup> DPMO, "Core Options for Reforming the California Gasoline Spot Market," Letter to the Governor (Jan. 31, 2024); see Oil Price Information Service (OPIS), "Volatility and Uncertainty in Bay Area Gasoline Market Deter Trade" (Sept. 12, 2024) (noting significant maintenance-based supply constraints).





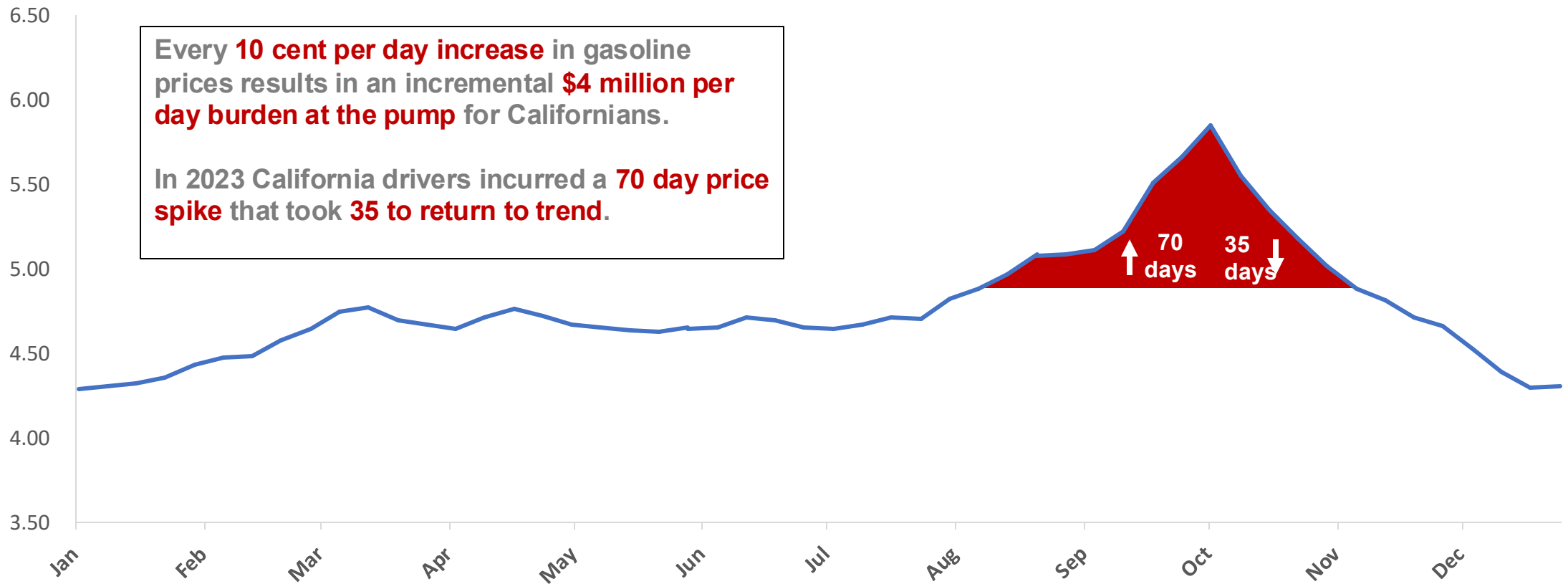
# Anatomy of a Price Spike





# Consumers Burdened with Elevated Prices for 105 days in the Summer of 2023

Weekly Retail Gasoline Prices, 2023\$/Gallon

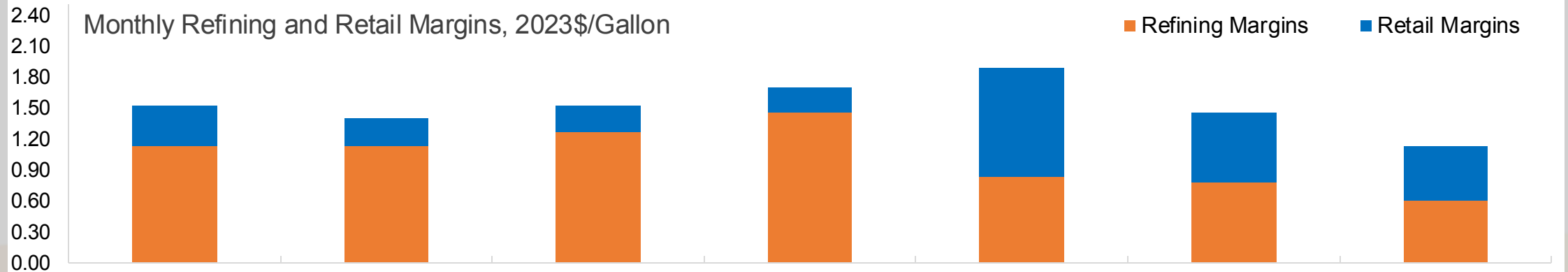


Source: Dr. Gigi Moreno, "Planned Maintenance and Gasoline Prices," CEC Gasoline Summer Outlook Workshop, June 6, 2024.



# Refining & Retail Margins Increase with 2023 Price Spike

Weekly Retail Price, 2023\$/Gallon



Source: M1322 (Industry-Reported) Data, U.S. Energy Information Administration



# Preventing Price Spikes Could Save Californians Billions

<b>Scenario: Percentage of 2023 Price Spike Averted</b>	<i>Average Change in Retail Price (July-Nov. '23)</i>	<i>Savings to Californians Per Day</i>	<i>Savings to Californians Per Week</i>	<i>Savings to Californians, Total</i>
<b>100%</b> (fully averted)	\$0.00	\$20.8M	\$146M	\$2.19B
<b>75%</b> (mostly averted)	\$0.15 ↑	\$15.6M	\$109M	\$1.63B
<b>50%</b> (half averted)	\$0.29 ↑	\$10.3M	\$72.0M	\$1.08B
<b>25%</b> (mostly not averted)	\$0.43 ↑	\$5.00M	\$35.0M	\$525M
<b>0%</b> (no avoidance)	\$0.56 ↑	\$0	\$0	\$0

Source: DPMO calculations.



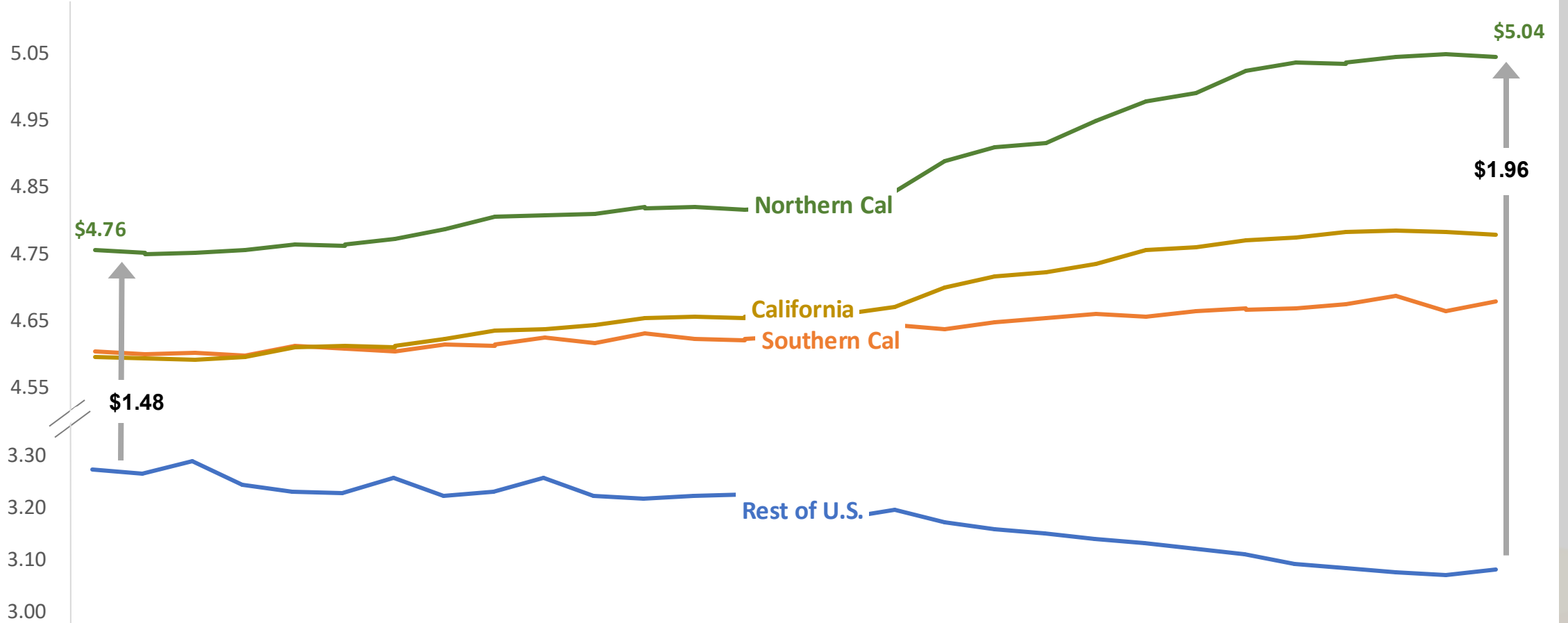
# Retail Prices on a Sharp Upward Trend in Northern California

Average Price of Gasoline, \$/Gallon

Aug 2024

Sep 2024

20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17





# Prices and Refining Margins Increase While Costs Decrease

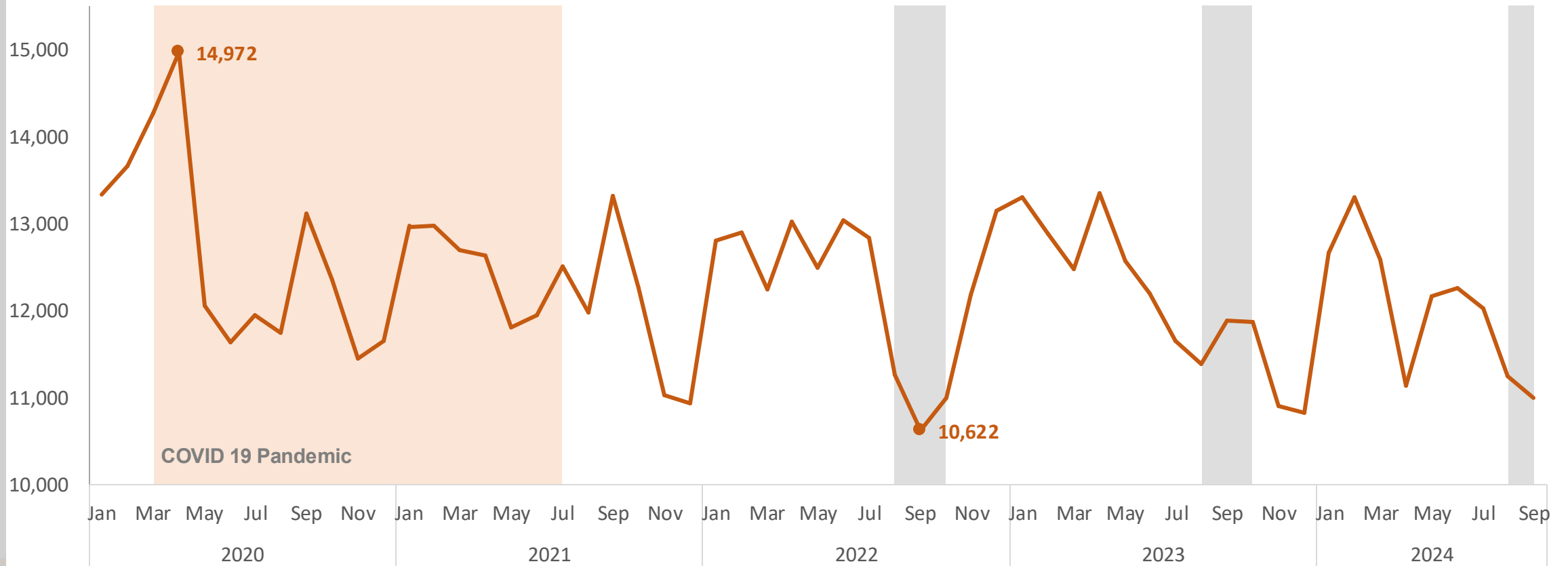
	Change	Latest Date September 16, 2024	4-Weeks-Ago August 19, 2024
Retail Price	↑ \$0.20	\$4.52	\$4.32
Retail Margins	↓ -\$0.05	\$0.43	\$0.48
Refining Margins	↑ \$0.34	\$0.90	\$0.56
Crude Oil Cost	↓ -\$0.10	\$1.78	\$1.88
Climate and Environmental Policy	\$0.01	\$0.52	\$0.51
Federal and State Taxes	\$0.00	\$0.88	\$0.88

Notes and Sources: CEC California Gasoline Price Breakdown and Margins. [Estimated Gasoline Price Breakdown and Margins \(ca.gov\)](#). Climate and Environmental Programs includes State Underground Storage Tank Fee, Environmental Programs. Federal and State Taxes includes State and Local Sales Tax, State Excise Tax, Federal Excise Tax. Retail Price is Average Branded Price.



# Refiners Store More in the Winter and Early Summer, Less in Late Summer and Early Fall

Monthly Average Refinery Stocks of Refined Gasoline and Blending Components, Thousands of Barrels



Source: CEC Weekly Fuels Watch.



# Thank you





# Stabilizing California's Fuel Market

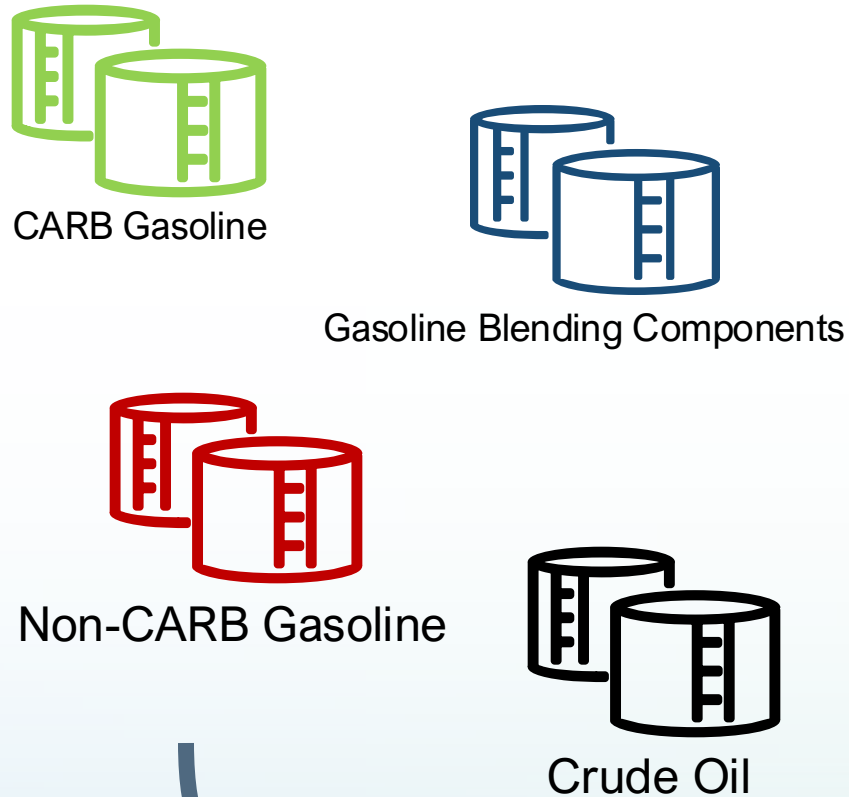
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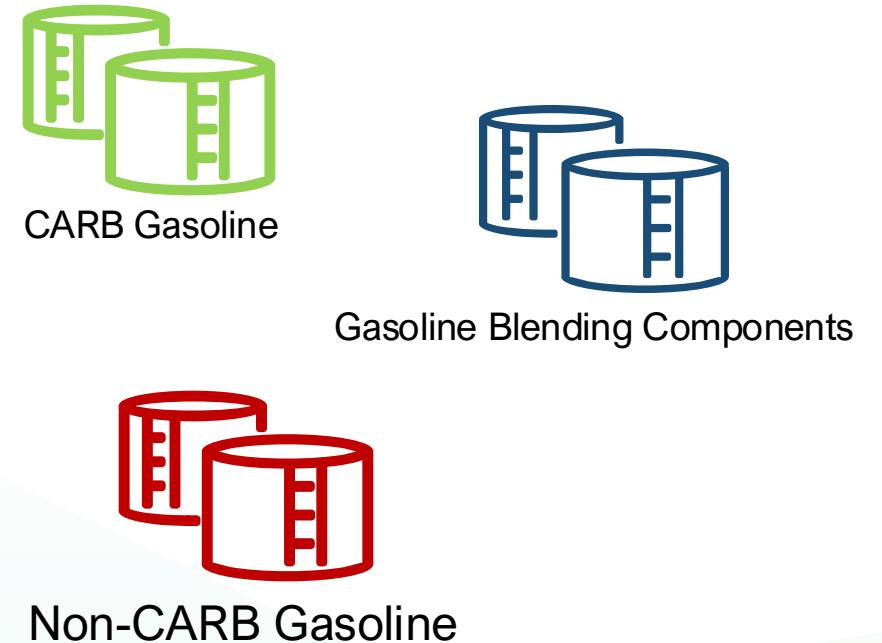


# Refinery Inventory Capacity: Example

Within the Refinery Gates



Terminal Storage  
(Leased or Owned)

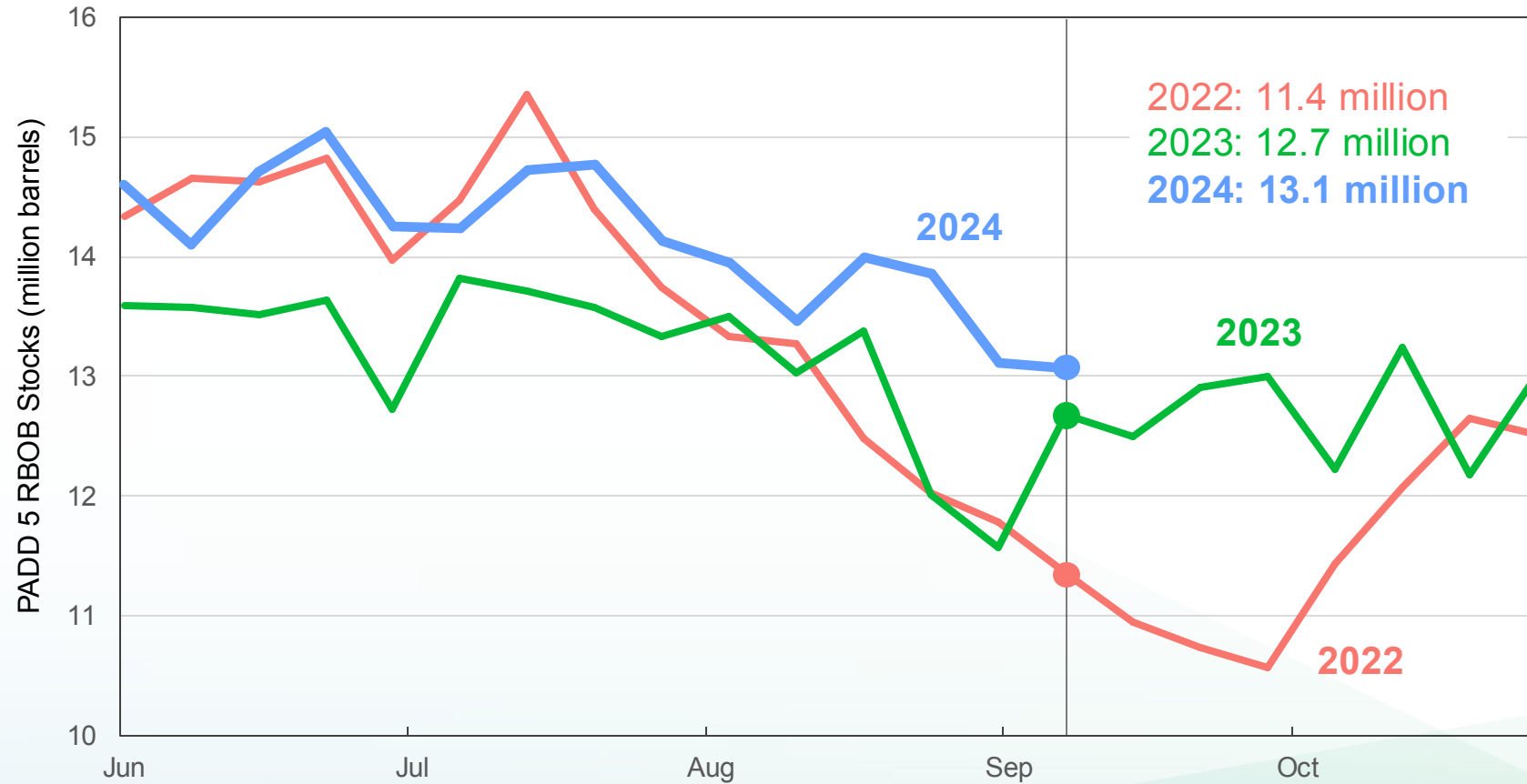


Total Refinery Inventory Capacity



# West Coast Gasoline (RBOB) Stocks

### Weekly Summer Gasoline Stocks (2022-2024)



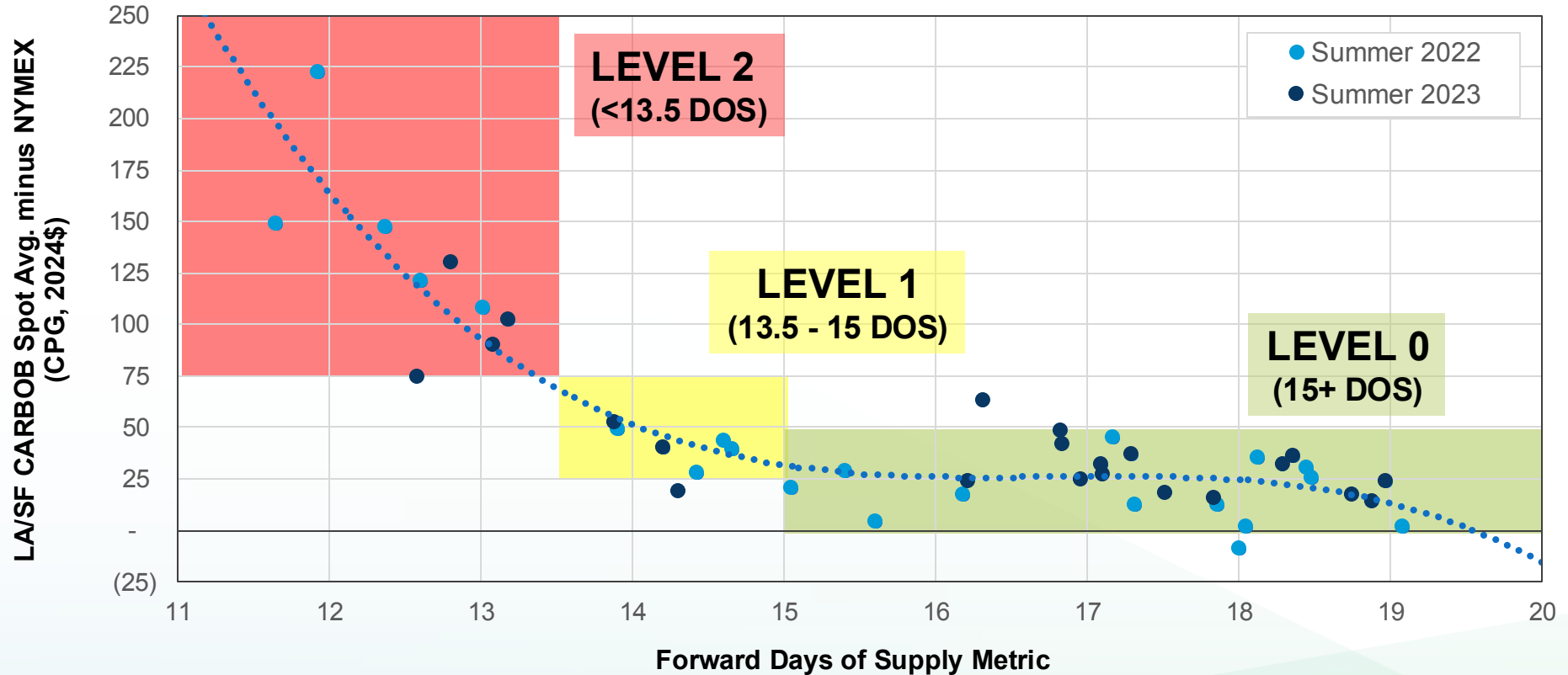
Source: Gasoline stocks from EIA [West Coast \(PADD 5\) Stocks of Crude Oil and Petroleum Products \(eia.gov\)](https://www.eia.gov)



# Days of Supply

...Price spreads increase

Summer 2022 and 2023 Price Spread vs. Days of Supply

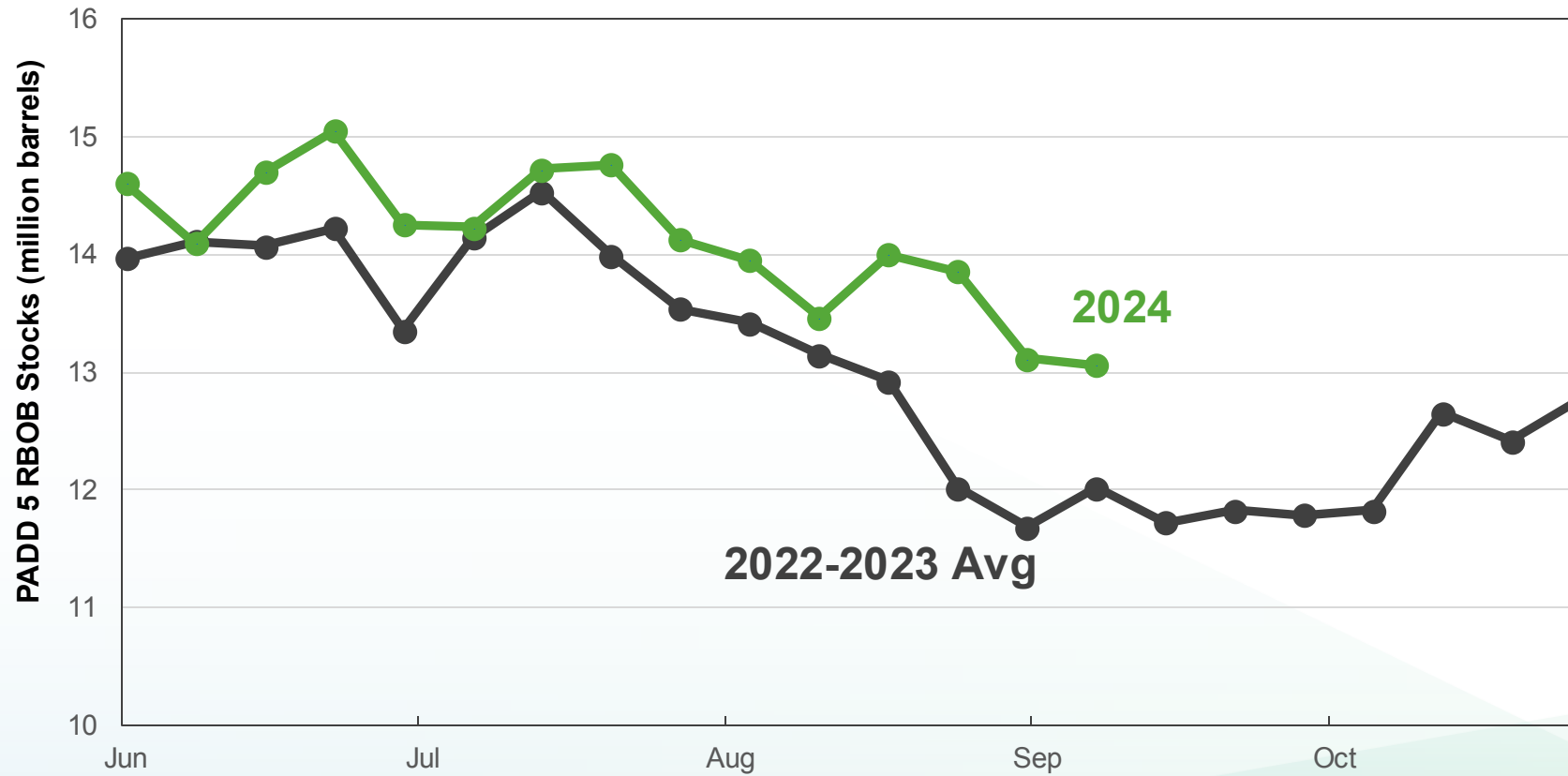


As Days of Supply fall...



# Summer Inventory Trends

Average Summer Gasoline Stocks by Week  
(2024 vs. 2022-2023 Average)

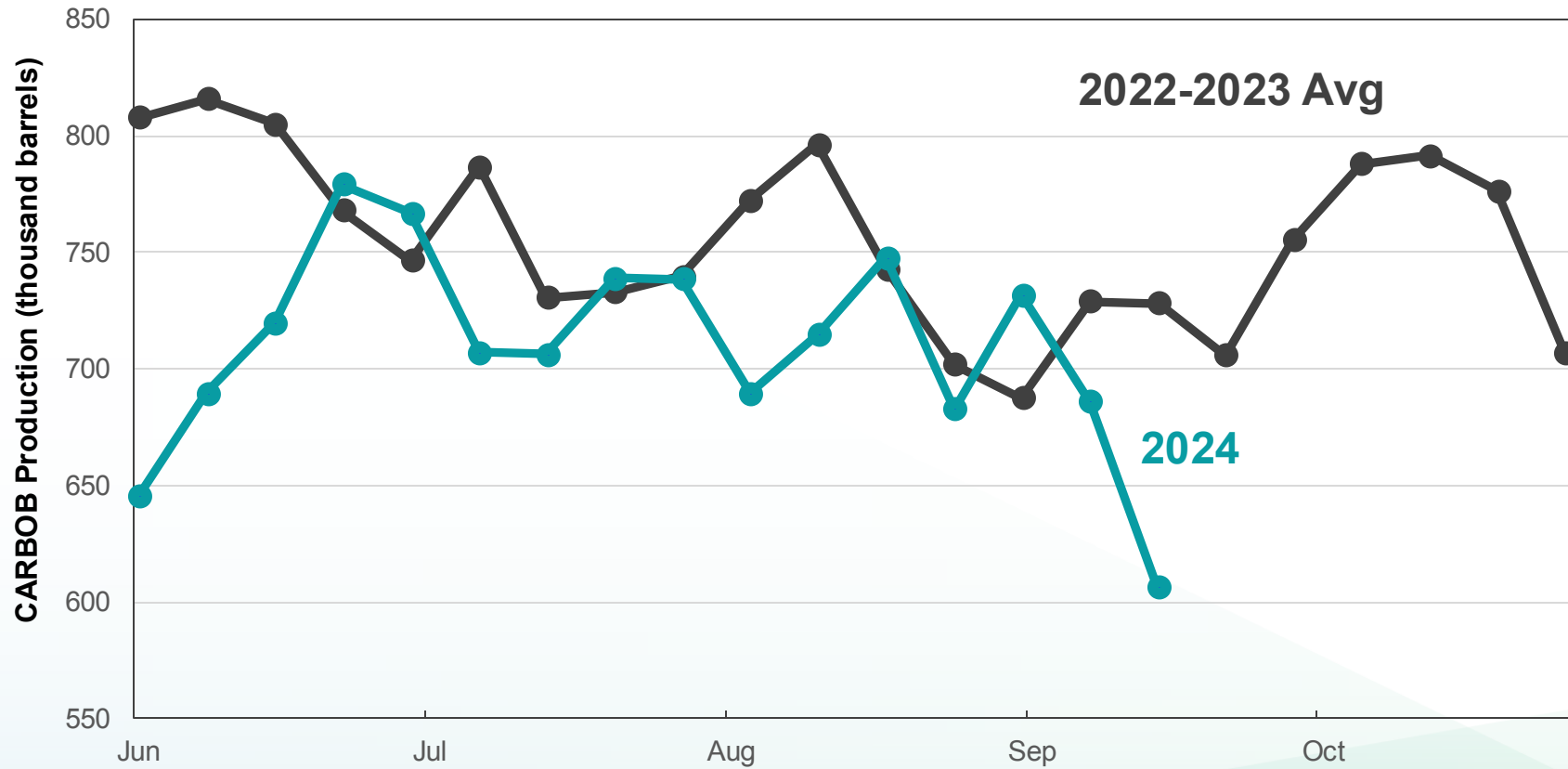


Source: Gasoline stocks from EIA [West Coast \(PADD 5\) Stocks of Crude Oil and Petroleum Products \(eia.gov\)](https://www.eia.gov/wc/padd5)



# Summer Production Trends

Average Daily Summer CARBOB Production by Week  
(2024 vs. 2022-2023 Average)

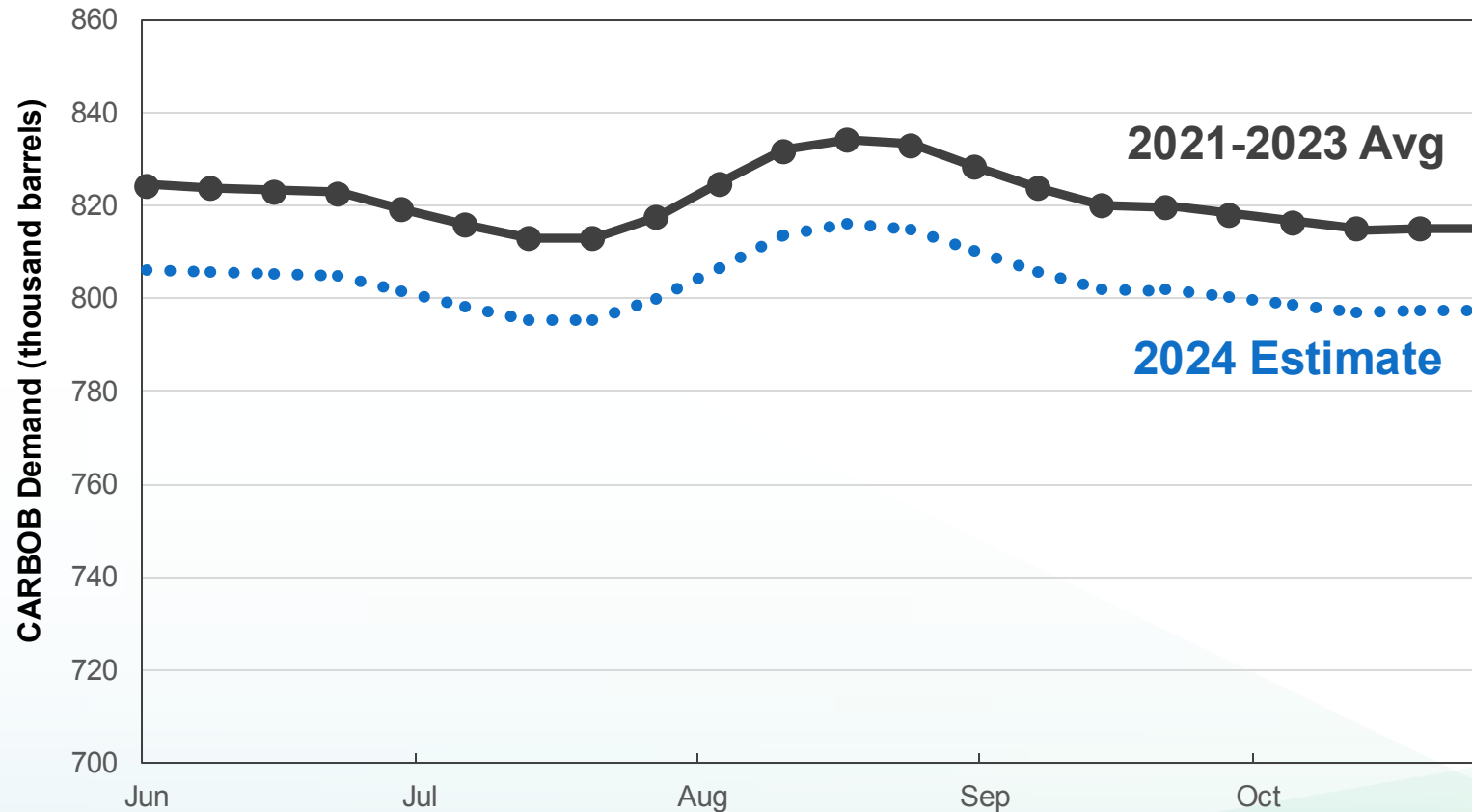


Source: Production from CEC [Weekly Fuels Watch Dashboard](#).



# Summer Demand Trends

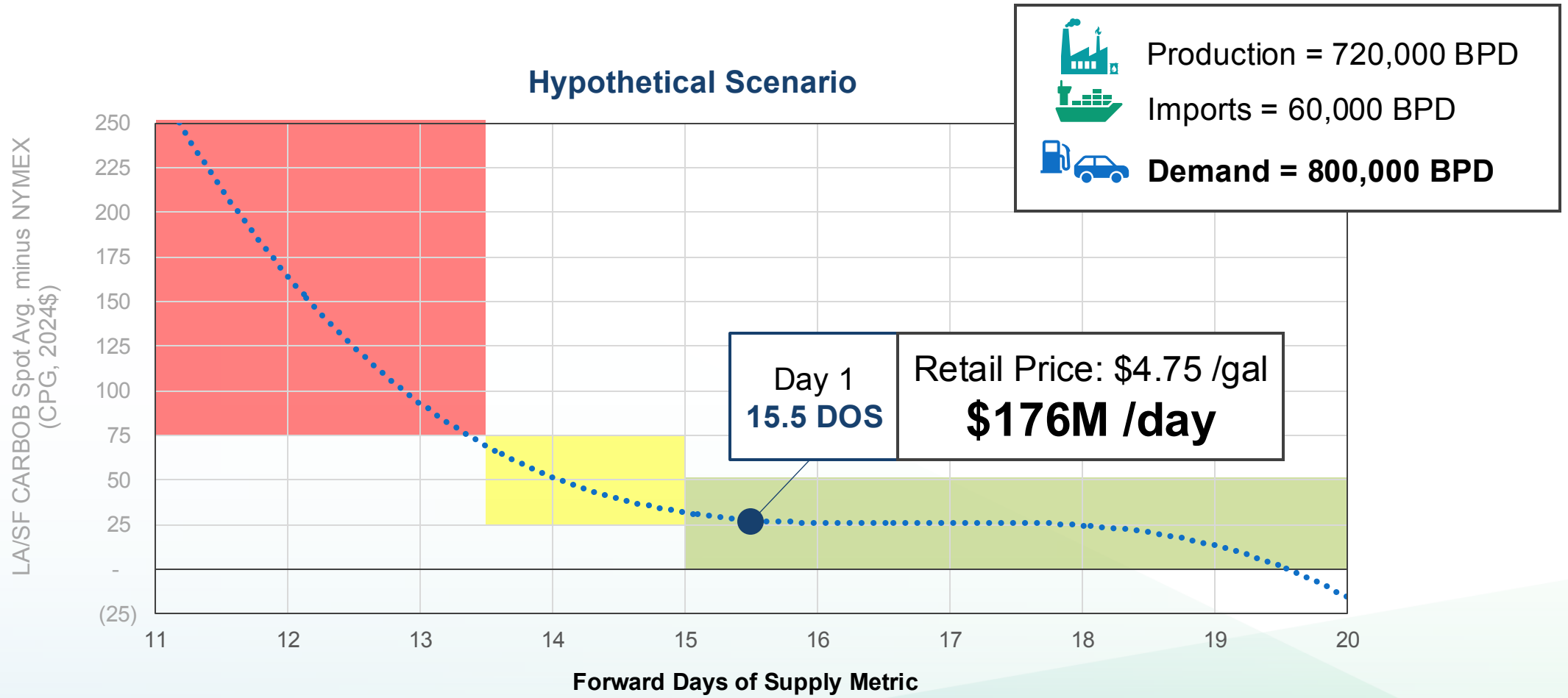
Average Daily Summer CARBOB Demand by Week (2021-Current)



Source: California Department of Tax and Fee Administration (CDTFA) [Fuel Taxes and Statistics Report](#)  
Note: Inferred CARBOB is an estimate of CARBOB using 90% of total gasoline (without Aviation Gasoline).



# Maintaining Market Liquidity

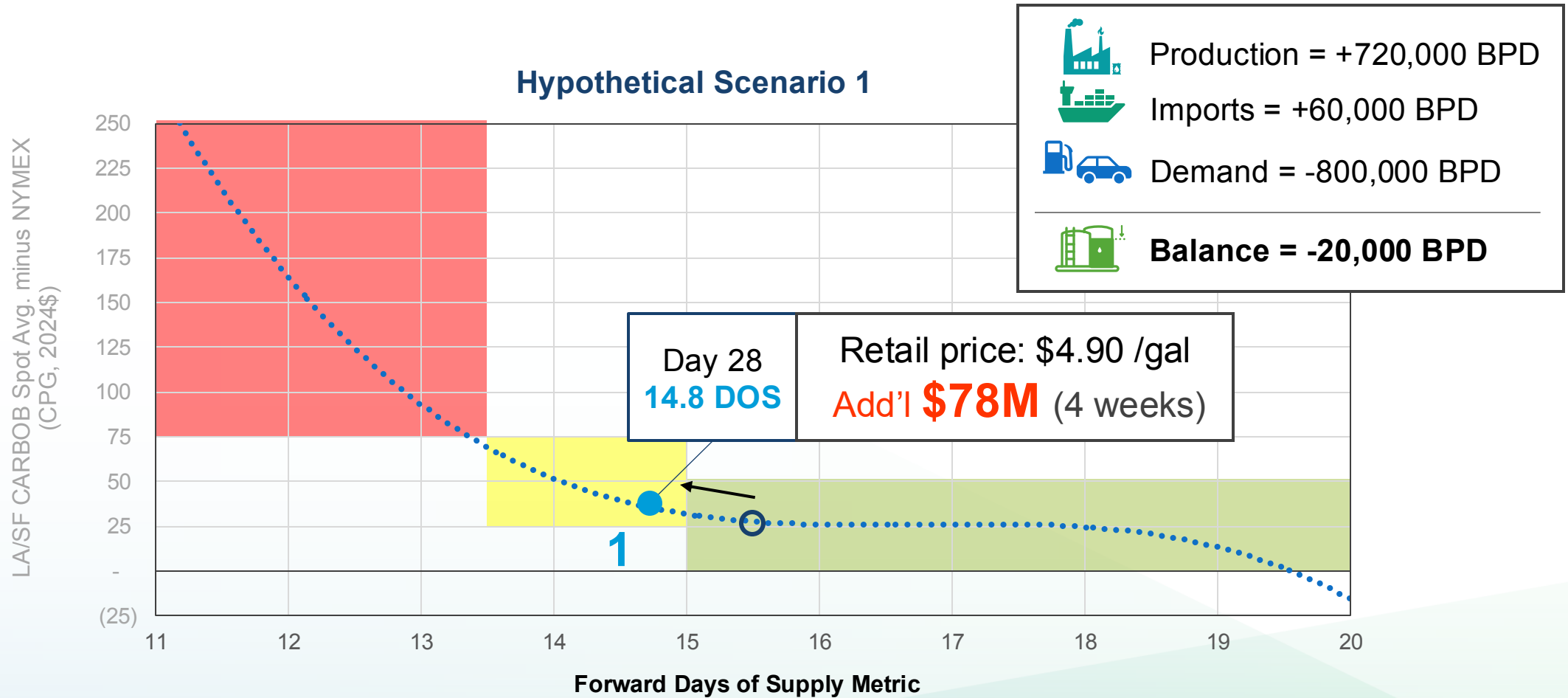


Prices, supply, and demand conditions are hypothetical and used for illustrative purposes.





# Maintaining Market Liquidity



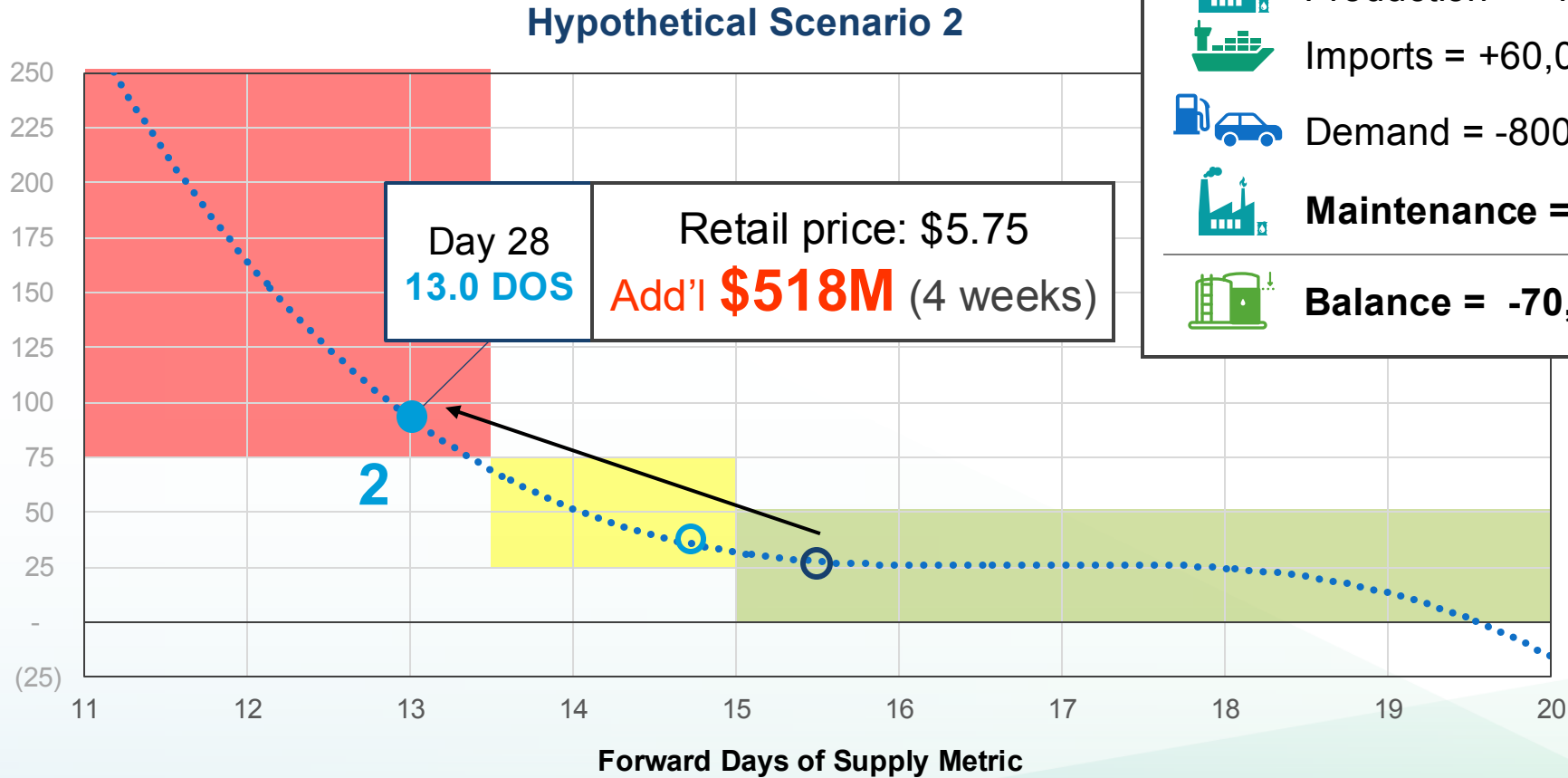
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# Maintaining Market Liquidity



LA/SF CARBOB Spot Avg. minus NYMEX (CPG, 2024\$)



	Production = +720,000 BPD
	Imports = +60,000 BPD
	Demand = -800,000 BPD
	Maintenance = -50,000 BPD
<hr/>	
	Balance = -70,000 BPD

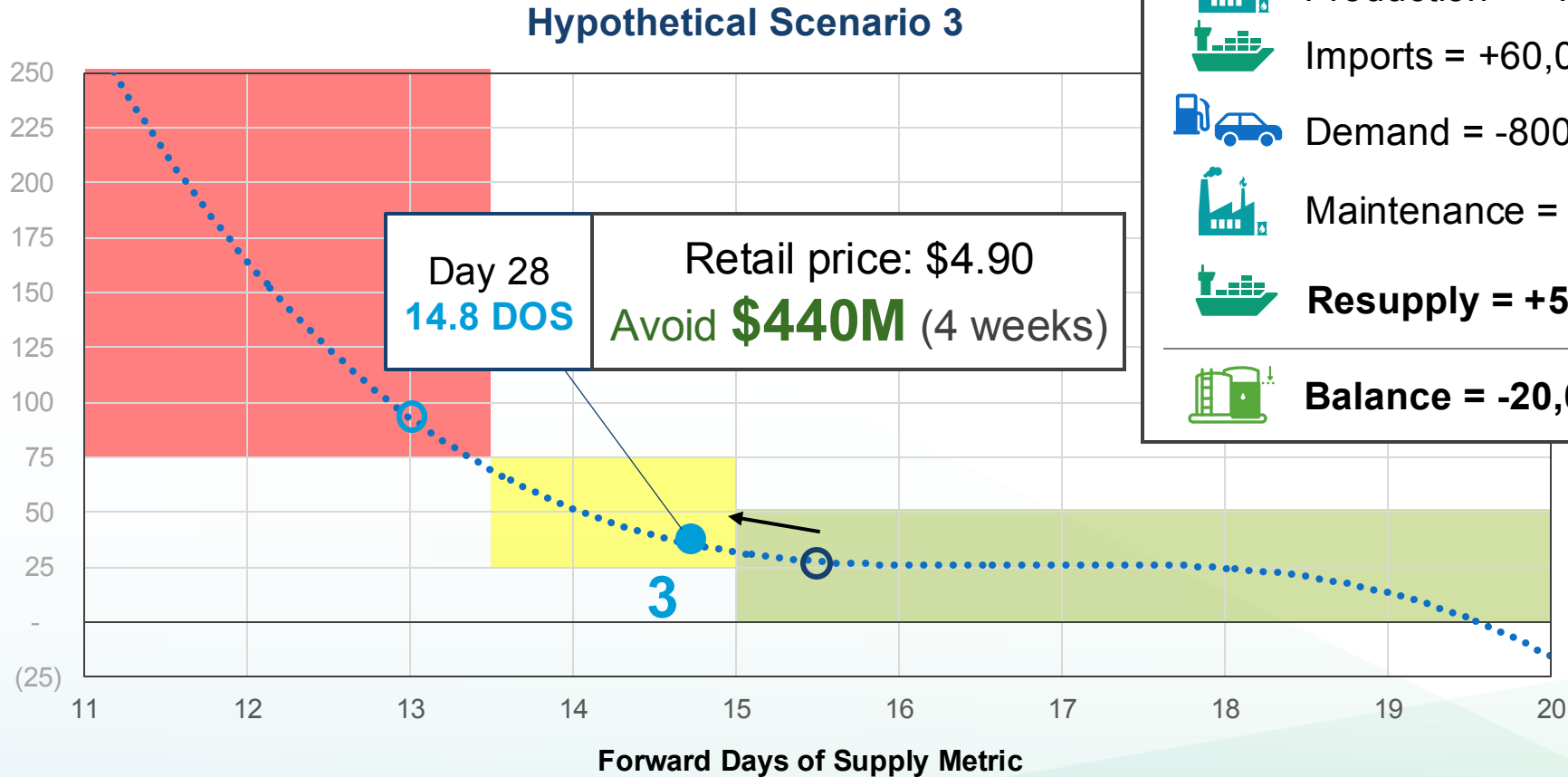
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# Maintaining Market Liquidity



LA/SF CARBOB Spot Avg. minus NYMEX (CPG, 2024\$)



- Production = +720,000 BPD
- Imports = +60,000 BPD
- Demand = -800,000 BPD
- Maintenance = -50,000 BPD
- Resupply = +50,000 BPD
- Balance = -20,000 BPD

Prices, supply, and demand conditions are hypothetical and used for illustrative purposes.



# Other Considerations

---

- Actual supply and demand balance requires careful planning.
- Resupply can be accomplished through inventory build-up prior to a planned maintenance event or additional marine imports.
- Maintaining higher inventory levels should help mitigate the impact of sudden unplanned maintenance, which is common and can occur on short notice.

# Thank You!



Siva Gunda  
Vice Chair