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STAFF REPORT

SB X1-2 Implementation: Maximum Gross Gasoline Refining Margin and Penalty

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California Energy Commission

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ABSTRACT

This report constitutes staff recommendations to the California Energy Commission (CEC) to deprioritize the implementation of a maximum gross gasoline refining margin and penalty under Public Resources Code Section 25355.5.

The report evaluates the possible impacts of a maximum gross refining margin and penalty to the supply-demand balance in California's transportation fuels market.

Keywords: California Energy Commission, refinery maintenance, refining margin, transportation, gasoline, petroleum, liquid fuels, inventory

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EXECUTIVE SUMMARY

The California Energy Commission (CEC), under the Petroleum Industry Information Reporting Act of 1980 (PIIRA), is responsible for developing a complete and thorough understanding of the petroleum industry. Through Senate Bill (SB) X1-2 (Stats. 2023, 1st Ex. Sess., ch. 1) and Assembly Bill (AB) X2-1 (Stats. 2024, 2nd Ex. Sess., ch. 1), the California Legislature expanded the CEC's regulatory tools to enhance petroleum market transparency, enable the CEC to better understand causes behind gasoline price spikes, develop strategies to protect consumers from unreasonable price spikes, and prevent petroleum market failures during the state's transition to clean, alternative fuels. SB X1-2 also created the Division of Petroleum Market Oversight (DPMO), an independent division of the CEC responsible for market oversight, investigations, economic analysis, and policy recommendations.

California's petroleum market is rapidly evolving. The conversion of two domestic refineries to alternative fuel sources in the past five years and recent announcements of the potential closures of two more refineries in California have created uncertainty in California's transportation fuels market. As noted in Vice Chair Gunda's June 27, 2025 letter to Governor Gavin Newsom, California is entering a pivotal "mid-transition" phase in the state's transportation sector. In this phase, demand for the incumbent petroleum-based fuel system, while declining, remains substantial, as the clean, alternative fuel system continues to scale. During this phase, it is critical that the state maintain both its expansion of new clean, alternative fuels while actively managing a gradual and responsible phase-down of the petroleum market. In this phase, unanticipated refinery disruptions or insufficient planning could have outsized impacts on consumers.

While the CEC has gathered significant data on the petroleum market to date, recent market disruptions warrant further analysis. As this report details, the CEC's current analysis is insufficient to determine whether its use of specific regulatory tools would support the state's goals of stabilizing the petroleum market and protecting California consumers, workers, communities, and the environment. During this mid-transition, it is also critical for the state to maintain in-state petroleum supply to ensure the protection of consumers from future gasoline price spikes.

Thus, given recent market changes and the need for further qualitative analysis, the CEC recommends reprioritizing its work away from developing a cap on gross gasoline refining margins to promote continued investment in refinery assets and promote safe and reliable operations. At minimum, the CEC recommends not taking any further action on a maximum GGRM and penalty for at least five years. Beyond this, if the CEC adopts a maximum GGRM and penalty at any point before 2035, then upon receiving a request from a refiner for an exemption pursuant to Public Resources Code section 25355.5(m), the CEC will consider a showing of any of the following to be good cause that would be the basis for an exemption under that provision: (1) the refiner made significant investments in gasoline producing units (e.g. fluid catalytic cracking, hydrocracker, naphtha) at a California refinery between January 1, 2026 and December 31, 2030, or (2) other factors that the CEC would ordinarily consider in

determining whether there is good cause for an exemption. This report serves as an interim evaluation of California's petroleum market and potential impacts of the CEC's use of these regulatory tools. As discussed, deprioritizing the implementation of a maximum GGRM would serve to gather additional data to better inform the state on whether use of these tools will, in effect, increase market transparency and protect consumers during this pivotal mid-transition phase of the California transportation market.

CHAPTER 1:
Maximum Gross Gasoline Refining Margin

Background

This section gives background for the:

- Statutory requirements for the maximum gross gasoline refining margin and penalty for California refiners.
- Current market conditions in California's gasoline market today.
- Expected market conditions for future refinery closures.

Public Resources Code Section 25355.5

Pursuant to Public Resources Code Section 25355.5(b), the California Energy Commission (CEC) has authority to "…by regulation or order at a business meeting, subject to the requirements of subdivision (f), set a maximum gross gasoline refining margin." Public Resources Code Section 25355.5(a)(1) defines the gross gasoline refining margin for these purposes to mean:

> …the amount, expressed in dollars per barrel and calculated by the commission on a monthly basis, equal to the volume-weighted average rack price of wholesale gasoline sold by a refiner in the state, less the volume-weighted fees or estimated valuations of costs embedded in all of the refiner's wholesale gasoline sales associated with the low carbon fuel standard and the cap and trade cap-at-the-rack program, less the refiner's volume-weighted average acquisition cost.

The associated penalty, pursuant to subdivision (c), "…shall be a percentage of the amount by which the refiner's gross gasoline refining margin excluding state program costs exceeds the maximum gross gasoline refining margin, converted from dollars per barrel to dollars per gallon, multiplied by the number of gallons sold by the refiner during the calendar month."

Before the CEC can adopt a maximum gross gasoline refining margin, it must make a cost-benefit determination supported by detailed findings and publish both the determination and any draft decision for public comment prior to taking action at a business meeting. In accordance with Public Resources Code Section 25355.5(e):

> (e) The commission shall not set a maximum gross gasoline refining margin or accompanying penalty under subdivisions (b) and (c), respectively, unless it finds that the likely benefits to consumers outweigh the potential costs to consumers. In making that determination, the commission shall consider all factors that in its discretion it deems relevant, including at a minimum all of the following factors, although no one factor shall be determinative:

(1) Whether it is likely that the maximum gross gasoline refining margin and penalty will lead to a greater imbalance between supply and demand in the California transportation fuels market than would exist without the maximum margin and penalty.

(2) Whether it is likely that the maximum gross gasoline refining margin and penalty will lead to higher average prices at the pump on an annual basis than would exist without the maximum margin and penalty.

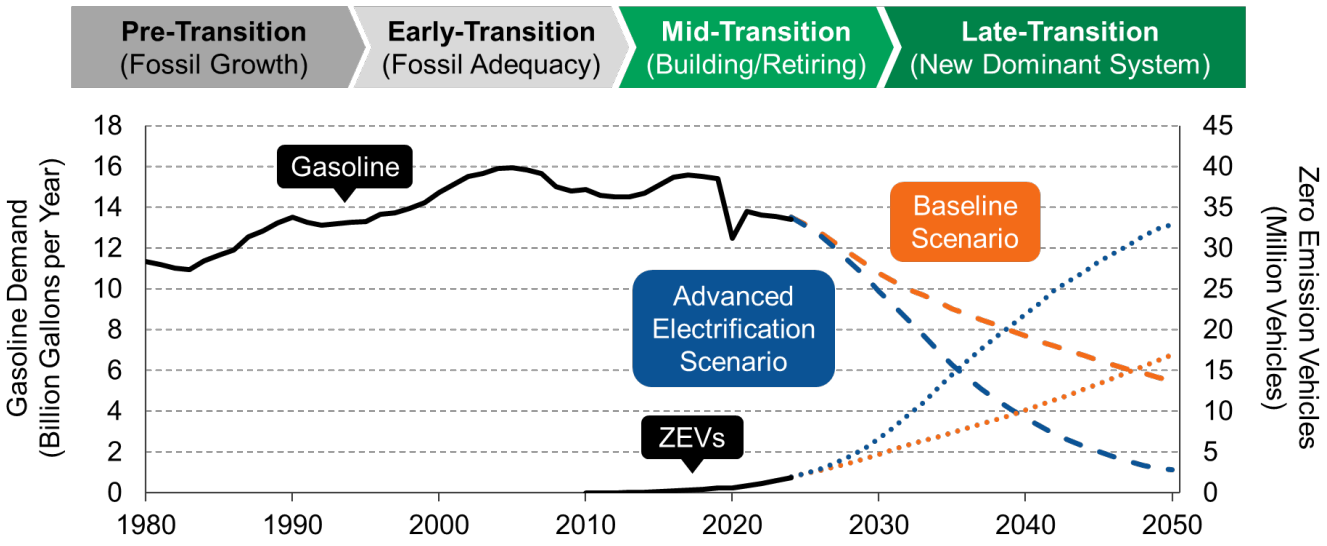
(3) Whether case-by-case exemptions from the gross gasoline refining maximum margin will be sufficient to ensure that individual refiners have an opportunity to demonstrate the need for a greater margin before they make decisions about production.

California Refining Capacity

California's successful decarbonization strategies are propelling the state's transportation sector into the "mid-transition," a pivotal and challenging period in which demand for incumbent petroleum fuels, while declining, remains substantial as demand for clean alternative technologies scales up.[1] This phase requires supporting the growth of the clean system while managing an orderly decline of the legacy fossil system. However, investor confidence to support fossil system investments during the mid-transition can wane. Proactive management is critical to ensure fuel reliability, economic stability, protection of communities, workers, and the environment, and continued support for decarbonization. Figure 1 shows how California's gasoline demand has evolved through each phase of the transition, with the adoption of zero emission vehicles contributing to the decline of petroleum-based fuels and decarbonization of the transportation sector.

1 Grubert, Emily and Sara Hastings-Simon. 2022. *Designing the mid-transition: A review of medium-term challenges for coordinated decarbonization in the United States*. Wiley Interdisciplinary Reviews: Climate Change. https://doi.org/10.1002/wcc.768

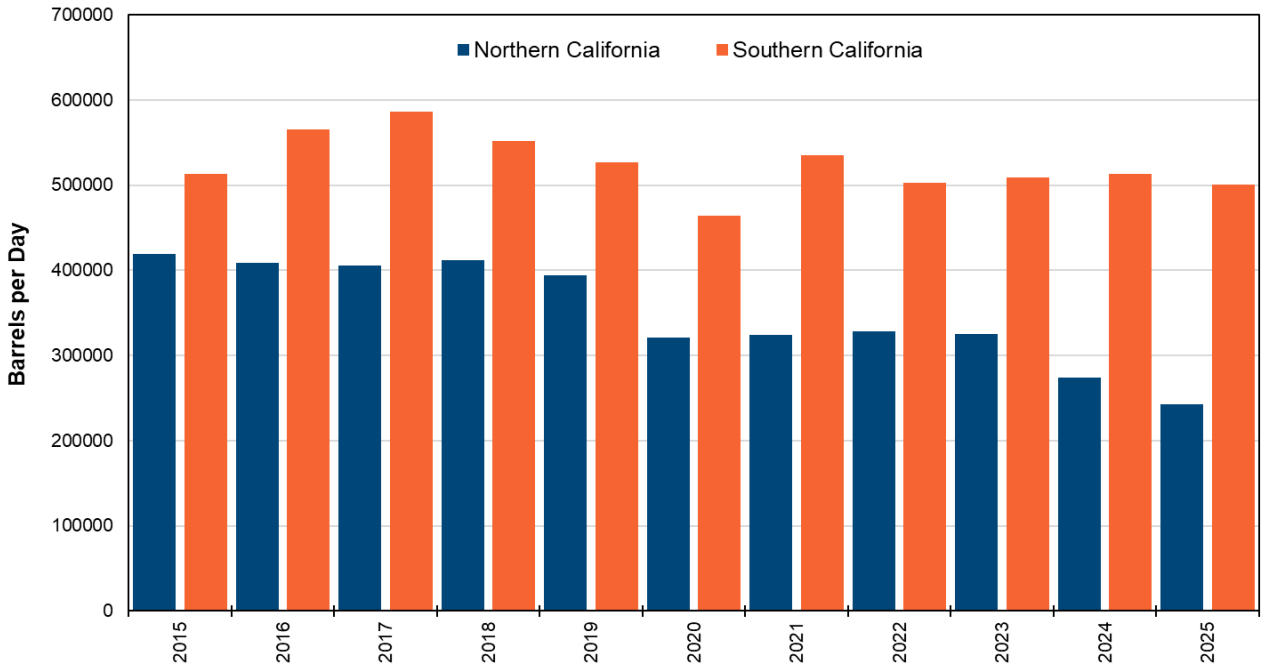
Figure 1: Phases of California's Transportation Sector Transition



Sources: Fuel Taxes Statistics & Reports (CDTFA). Vehicle registration data (California Department of Motor Vehicles). 2022 Integrated Energy Policy Report (CEC). Dotted lines represent CEC forecasts.

Since 2020, two California refineries, Marathon Martinez and Phillips 66 Rodeo, have converted to producing renewable fuels. These transitions support the state's shift to cleaner, less carbon-intensive fuels, but also reduced total gasoline production in northern California by approximately 140,000 barrels per day (bpd). This has created a greater imbalance in gasoline production between northern and southern California, as seen in Figure 2; however, some of this imbalance is offset by the amount of imported finished fuel barged into Northern California.

Figure 2: Annual Average California Reformulated Gasoline Production



Source: CEC analysis of Petroleum Industry Information Reporting Act (PIIRA) data
Note: 2025 is a year-to-date average

Currently, eight California-based refineries represent over 98% of the state's petroleum refining capacity among producers refining CARB-specific gasoline.[2] However, two of these refineries have recently announced potential closures that would further reduce in-state refining capacity by nearly 18% over the next year. Phillips 66 announced its intent to close its Wilmington refinery, with a crude refining capacity of 139,000 bpd, in the fourth quarter of 2025 and will continue serving the market through a marine import business model.[3] The Phillips 66 Wilmington closure will reduce southern California gasoline production by about 75,000 bpd.

Valero has announced its intent to idle, restructure, or cease refining operations at its Benicia refinery, with a crude refining capacity of 145,000 bpd, by the end of April 2026, further reducing overall state capacity and widening the gap between production in northern and southern California. If this refinery closes, northern California gasoline production would decline by about 80,000 bpd.

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2 2024. "California's Oil Refineries." CEC. https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/californias-oil-refineries.

3 2024. "Phillips 66 provides notice of its plan to cease operations at Los Angeles-area refinery." Phillips 66. https://investor.phillips66.com/financial-information/news-releases/news-release-details/2024/Phillips-66-provides-notice-of-its-plan-to-cease-operations-at-Los-Angeles-area-refinery/default.aspx.

While California's refining capacity has declined in recent years, the demand for petroleum-based fuels, particularly gasoline, has also declined. Average daily consumption of finished gasoline (blended with ethanol) declined by roughly 13 percent between 2019 and 2024,[4] and the decline is accelerating due to the rapid adoption of zero-emission vehicles (ZEVs). Since 2023, ZEVs have comprised 20 to 25 percent of new vehicle sales in California, with about 100,000 new ZEVs sold each quarter.

The potential closures of two refineries in 2025 and 2026, combined with the two refinery conversions in 2020 and 2024, would mark a 30 percent total reduction of in-state gasoline production capacity since 2019. This outpaces the expected demand decline of 17 percent over the same period,[5] representing a further imbalance between in-state production and demand. This imbalance is made up through gasoline and gasoline blending components delivered from other U.S. states and overseas, which have increased in recent years and, this past year, have regularly exceeded 200,000 barrels per day, the highest rate of imports in the last four years.[6]

Analysis

CEC staff began collecting gross gasoline refining margins data in 2023, as a result of refiner reporting requirements mandated by legislation (SB 1322, Allen, 2022). This authority was expanded by SB X1-2, which required refiners to provide net gasoline refining margin information to differentiate profits and costs. The CEC has since requested additional data for prior years to enable further historical analysis.

Additionally, the CEC held public workshops on November 28, 2023, April 11, 2024, and September 12, 2024 to present analysis, discuss benefits and risks, and receive stakeholder feedback, including detailed presentations and written comments, on a maximum gross gasoline refining margin (GGRM) and penalty framework.

As shown in Figure 3, sharp swings in gross gasoline refining margins, most notably in 2015, 2022 and 2023, have occurred under very different global market conditions. This pattern suggests that while external factors play a role, California's market structure and supply constraints make it consistently sensitive to disruptions, regardless of the broader economic environment. As the state's refining sector becomes increasingly concentrated, the potential

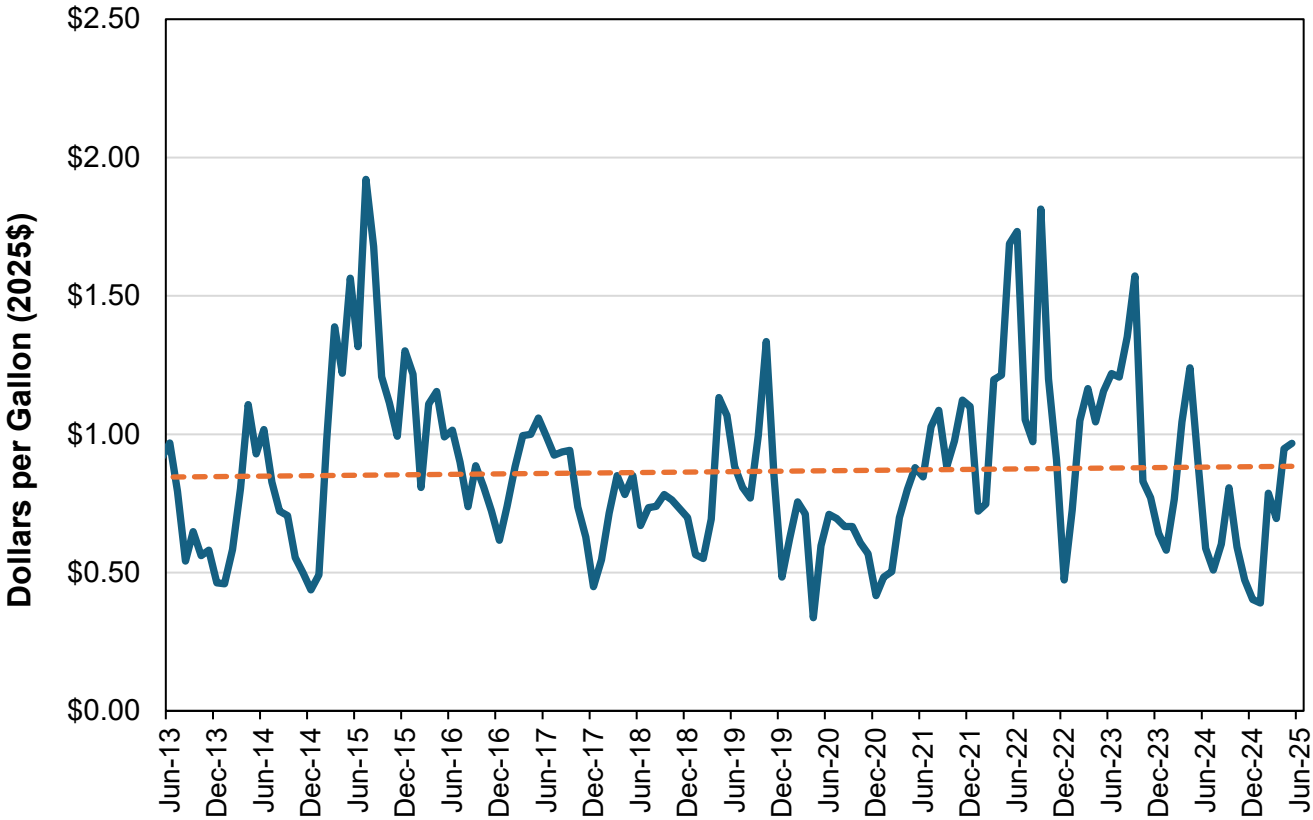
4 California Department of Tax and Fee Administration. 2025. *Motor Vehicle Fuel 10 Year Report*. https://cdtfa.ca.gov/taxes-and-fees/spftrpts.htm.

5 Bailey, Stephanie, Mathew Cooper, Quentin Gee, Heidi Javanbakht, and Danielle Mullany. 2024. *Draft 2024 Integrated Energy Policy Report Update.* California Energy Commission. Publication Number: CEC-100-2024-001-CMD.

6 Khan, Shariq and Nicole Jao. 2025. "California fuel imports hit 4-year high amid refinery outages." Reuters. https://www.reuters.com/business/energy/california-fuel-imports-hit-4-year-high-amid-refinery-outages-2025-06-09/.

for margin and price spikes from refinery outages and other supply disruptions will grow, placing greater burden on consumers.

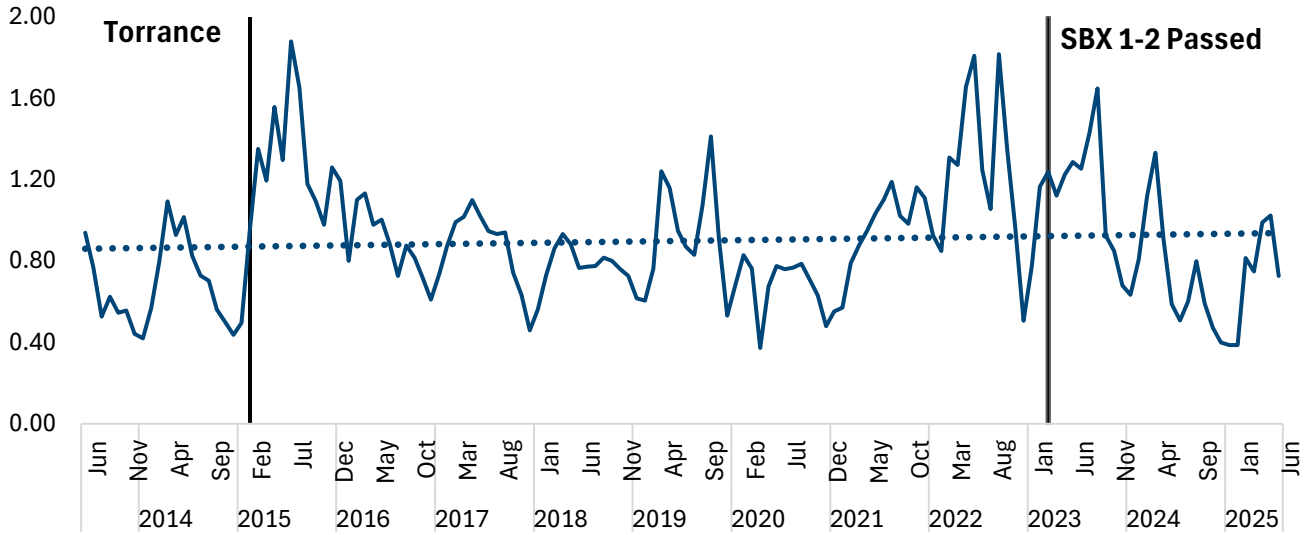
Figure 3: California Weighted Average Gross Gasoline Refining Margins (June 2013 – June 2025)



Source: CEC analysis of M1322 data.

Beyond gross gasoline refining margins, the data paints a picture of a refining industry operating within a constrained and highly complex environment.

Figure 4. Monthly Volume Weighted GGRM for All Operators with Linear Trend (2025$/gallon)



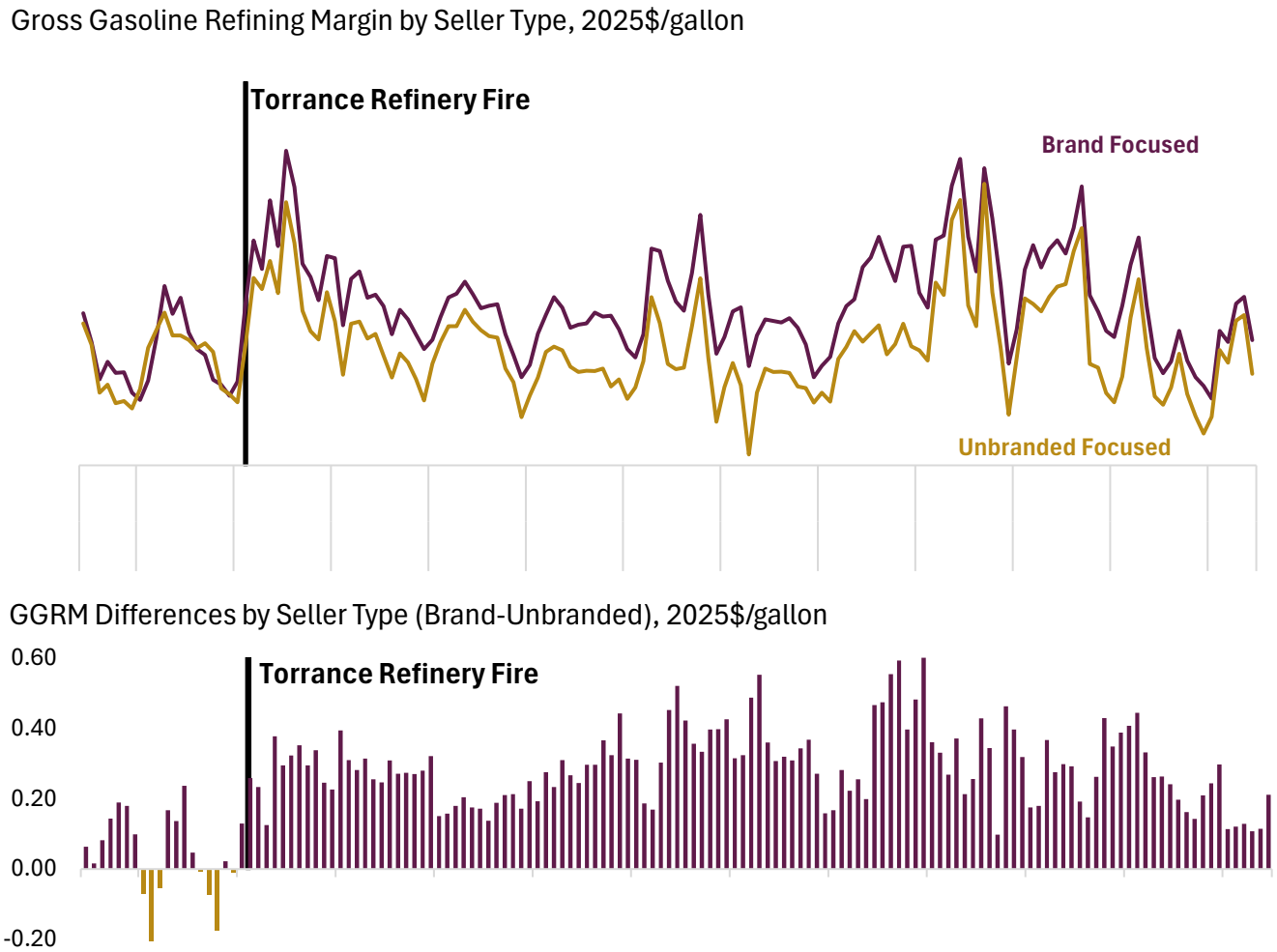
Notes and Source: Based on DPMO analysis of CEC M1322 data. Dollar values reported in constant 2025 dollars, adjusted for inflation using Bureau of Labor Statistics (BLS) Consumer Price Inex (CPI) for all products excluding energy.

As reflected in Figure 4 above and consistent with DPMO analysis, when the data are aggregated for the industry as a whole, the average weighted gross gasoline refining margin for all refiners in California shows a general upward trend since 2015, albeit with volatility including periods of record high margins during price spikes as well as periods with low margins, particularly during the COVID-19 pandemic. Average GGRMs in California have increased from an average of 67 cents per gallon between June 2013 and January 2015 to an average of 93 cents per gallon between February 2015 and June 2025[7].

DPMO analysis shows that this industry-wide lens may obscure more distinct trends when considering the different types of refiners that operate in California. Some of the larger refiners sell a significant portion of their production volumes through higher-priced "branded" sales channels, where other smaller refiners sell primarily via lower-priced "unbranded" sales channels. As illustrated in Figure 5 below, DPMO assesses there to be a more significant upward trend in gross margins for "brand-focused" refiners since 2015 while gross margins trends for "unbranded-focused" refiners are flatter.

7 All values are in constant 2025 U.S. dollars.

Figure 5: California Weighted Average Gross Gasoline Refining Margins by Seller Type (June 2013-June 2025)



Notes and Sources: Based on DPMO analysis of CEC M1322 data. Branded-focused refiners are those with at least 25 percent of wholesale sales in dealer tankwagon (DTW) channels. Analysis excludes sales to end-users.

DPMO assesses that this increasing discrepancy between refiner types could have significant implications for refinery closure risk. Refiners that supplied the branded market saw their GGRMs increase from an average of $0.68 per gallon between June 2013 and January 2015 to $1.01 per gallon between February 2015 and June 2025 (a $0.33 per gallon increase). In contrast, refiners that supplied the unbranded market saw their GGRMs increase from an average of $0.64 per gallon between June 2013 and January 2015 to an average of $0.76 per gallon between February 2015 and June 2025 (a $0.12 per gallon increase).[8]

8 For refiners that supplied the branded market, the GGRM standard deviation rose from $0.21 per gallon between June 2013 and January 2015 to $0.31 per gallon between February 2015 and June 2025 (a $0.10 per gallon increase). For refiners that supplied the unbranded market, the GGRM standard deviation rose from $0.19

The gasoline refining market in California is characterized by a few firms controlling the significant majority of production, with that concentration increasing materially in the coming months.[9] Market participants in concentrated markets often lack incentives to serve markets in an efficient, competitive manner. Refinery production disruptions tend to cause wholesale and retail price spikes, and during these periods, margins rise materially. DPMO assesses that a well-designed maximum GGRM and penalty would, in theory, induce refiners to supply greater quantities at lower prices, but developing such a policy requires a thorough understanding of refiners' gross and net margins.

California refineries may require comparatively higher capital investments in compliance technology, equipment upgrades, and maintenance, as well as increased labor and utility costs. Due to the complexity and variability of these additional costs, as well as reporting challenges and limitations with the CEC Form M1322, further analysis is needed to differentiate between gross and net refining margins.

California's refiners have not materially expanded their refining capacity in decades, and supply resilience is increasingly challenged by unplanned outages, aging infrastructure, and limited access to imported fuels. California's refiners are also contending with long-term structural changes, including declining gasoline demand due to vehicle electrification. These factors make the California petroleum market inherently vulnerable to supply shocks if it does not transition to a more holistically sourced supply chain that includes regular, ratable deliveries from other U.S. states and overseas.

Imposing a maximum GGRM and penalty in the current context could create additional challenges for California's in-state refining sector:

- Potential reduction in capital investment for critical refinery maintenance and upgrades, which could increase the risk of unplanned outages, undermining the reliability of the fuel supply during the mid-transition period and risking the health and safety of workers and nearby communities.
- Possible acceleration of refinery operator exits from the California market, further concentrating production among fewer facilities and potentially magnifying the impact of any single outage on regional and statewide production and increasing retail price volatility.

While CEC staff do not have direct data to measure assumptions on capital outlays or shutdown/exit thresholds, any reduction of California's in-state capacity increases the state's dependence on imported finished fuels from the Pacific Northwest, Asia, and other regions.

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per gallon between June 2013 and January 2015 to $0.30 per gallon between February 2015 and June 2025 (a $0.11 per gallon increase).

9 DPMO Presentation at the September 12, 2024 Workshop on Gross Gasoline Refining Margin Framework. https://energy.zoom.us/rec/share/okg6_7X1w9dBQXSHEQNR09X2T__VyC1HrHBEZmFoES7JKumth5gNztanBfFNAzQT.s7GqfureHxtC1TNV.

This exposes California's gasoline market to a different set of risks, including slower response to local supply disruptions, potential global trade shocks, and tariff uncertainty.

In light of this uncertain situation, it is prudent for the CEC to deprioritize implementing a maximum GGRM and penalty for at least one investment cycle while considering other tools to stabilize gasoline supply, including AB X2-1 authorities and other ways to encourage regular, ratable imports as needed.

CHAPTER 2:
Staff Recommendation

Maximum Gross Gasoline Margin

The CEC's preliminary analysis demonstrates that imposing a maximum gross refining margin penalty at this time may affect refiners' capital outlay plans in essential refinery maintenance and upgrades—activities critical to ensuring operational integrity and continuity of refinery operations. Constraining margins may also increase the risk of unplanned outages, compromise safety protocols, and delay maintenance activities that are usually governed by a five-year turnaround cycle requiring long-term planning and coordination of equipment, labor, supply chains, and regulatory compliance. While gross refining margins are not directly determinative of return-on-investment projections for capital expenditures, excessive regulatory constraints may create disincentives to certain maintenance investments.

After careful examination, CEC staff recommend deprioritizing the implementation of a maximum margin threshold and associated penalties for a minimum of five years (until 2030) for all California refiners, while prioritizing the implementation of resupply and minimum inventory rules (as per the CEC decision at the August 13, 2025 Business Meeting to open the Order Instituting Informational Proceeding on Petroleum Supply Stabilization). During this period, CEC staff recommend continuing collecting information for the cost-benefit analysis of implementing a GGRM. If the CEC adopts a maximum GGRM and penalty at any point before 2035, then upon receiving a request from a refiner for an exemption pursuant to Public Resources Code section 25355.5(m), the CEC will consider a showing of any of the following to be good cause that would be the basis for an exemption under that provision: (1) the refiner made significant investments in gasoline producing units (e.g. fluid catalytic cracking, hydrocracker, naphtha) at a California refinery between January 1, 2026 and December 31, 2030, or (2) other factors that the CEC would ordinarily consider in determining whether there is good cause for an exemption.

This framework underscores the importance of capital investments into maintaining refinery infrastructure. During this period, staff recommend the CEC collect and analyze empirical market data across multiple economic cycles. This timeframe could also accommodate up to two complete refinery maintenance and turnaround cycles, enabling operators to responsibly align operations with safety and environmental imperatives.

This should not be construed as a relinquishment of regulatory authority. Instead, it represents deliberate and measured action—demonstrating regulatory and policy maturity—while preserving the CEC's authority to revisit this proposal based on evolving market conditions and analytical findings. This should also not be construed as a recommendation to immediately implement a maximum margin and associated penalty in 2030 or in 2035, but to revisit the matter if their implementation is needed or, if warranted, perhaps suggest another similar de-prioritization. This approach provides the necessary certainty for refiners and infrastructure investors to maintain system reliability and protect consumers from the risks

associated with both excessive pricing and inadequate supply, supporting a smooth clean energy transition in California.

APPENDIX A:
Glossary

Term	Definition
Blendstocks	Any material that is blended in an oil refinery to make a product, especially for making gasoline.
California Air Resources Board (CARB)	The "clean air agency" in California government. CARB's main goals include attaining and maintaining healthy air quality, protecting the public from exposure to toxic air contaminants, and providing innovative approaches for complying with air pollution rules and regulations.
California Energy Commission (CEC)	The state agency established by the Warren-Alquist State Energy Resources Conservation and Development Act in 1974 (Public Resources Code, Sections 25000 et seq.) responsible for energy policy. Funding for the Commission's activities comes from the Energy Resources Program Account, Federal Petroleum Violation Escrow Account, and other sources.
Petroleum Industry Information Reporting Act (PIIRA)	Legislation enacted in 1980 that enables a complete response to possible shortages of fuel or other disruptions. PIIRA information also helps develop and administer energy policies in the interest of the state's economy and the public's well-being.