



June 27, 2025

Dear Governor Newsom,

Thank you for the opportunity to respond to your April 21, 2025, letter soliciting recommendations from our office on changes to state policy to ensure adequate transportation fuels supply during this pivotal time in our state's clean energy transition. In the months since receiving your letter, your energy team has engaged with the Petroleum Strategy Task Force, continued deep research into global petroleum market trends, convened roundtables and discussions with diverse stakeholders representing varied interests, and utilized new data afforded to us by legislation enacted over the last several years to better understand the petroleum industry.

This letter offers our strategies and recommendations to address your request for actions to ensure that Californians have access to safe, affordable, and reliable transportation fuels and that petroleum refiners continue to see value in serving the California market, even as in-state demand for petroleum-based fuels declines over the coming decades. These recommendations reflect the complexity of the issue, input from a multitude of stakeholders, and a faithful synthesis of robust data and discussions. We believe that these actions are necessary as the State considers its next steps to further our clean energy transition.

We look forward to working with members of the Legislature, fellow state agencies, industry, and stakeholders to implement these strategies. Together, we will evolve California's strategy to successfully phase out petroleum-based fuels by 2045 while protecting communities, workers, and consumers, and foster market conditions that support the industry's ability to operate safely, reliably, and successfully to meet demand through the transition.

Executive Summary

California's petroleum market is evolving rapidly, as California's pioneering climate and air quality policies, which are critical to protecting our communities' health, have accelerated the adoption of highly fuel-efficient conventional vehicles and zero emission vehicles (ZEVs), leading to a decline in demand for petroleum-based fuels. The decreasing demand for petroleum-based fuels underscores California's success in its transition to a sustainable, clean energy future. But the decreasing demand, economic factors, and volatility of the international petroleum market also introduces uncertainty to the petroleum industry, which impacts consumers, the workforce, and frontline communities. That uncertainty has only been compounded this year by actions of the current federal administration, which have both added more shocks to the global petroleum market and sought to undermine California's transition away from reliance on petroleum-based fuels.

In California, recent years have been marked by higher gasoline retail prices, in-state petroleum refinery conversions and exits, and a growing reliance on fuel imports to meet consumer demand. These impacts are not isolated to California and are also being felt nationally and globally. To address dramatic gasoline retail price spikes, you partnered with the Legislature in 2023 and 2024 to provide the CEC with new industry and market transparency tools to better understand the causes behind gasoline price spikes and to develop strategies to protect consumers during the transition to clean, alternative fuels.

Current analysis indicates a continued decline in gasoline demand; a credible risk of rapid near-term conversions or exits of existing refineries, which is consistent with global refinery industry consolidation; impacts to other critical infrastructure across the upstream, midstream and downstream segments; and safety and reliability challenges associated with disinvestment along the petroleum value chain.

The success of California's decarbonization strategies are transforming the state's transportation sector from its early transition phase into its pivotal and challenging "mid transition" phase.¹ In this phase, demand for the

¹ Grubert and Hastings-Simon (2022). *Designing the mid-transition: A review of medium-term challenges for coordinated decarbonization in the United States*. WIREs Climate Change. <https://doi.org/10.1002/wcc.768>

incumbent petroleum-based fuel system, while declining, remains substantial, as the clean, alternative fuel system continues to scale. In this phase, investor confidence in the incumbent system is expected to falter change due to long-term uncertainty about the trajectory and pace at which these two systems evolve.

During this mid-transition phase, the State must simultaneously continue supporting the rapid expansion of new clean, alternative fuels while actively managing a gradual responsible phase-down of the incumbent systems that millions of Californians will continue to depend upon for years to come. Successfully managing this transition and continuing the State's long-standing leadership in addressing climate, air quality, health, and environmental issues will require coordinated actions and strategic alignment of state, regional, and local jurisdictions.

As a result of all of these factors, immediate State actions are necessary to stabilize the near-term vulnerabilities of the entire transportation system and implement a comprehensive strategy to support a successful transition. Given sufficient time, the petroleum market is likely to find a new equilibrium following the disruption of a refinery closure, but in the near term, an abrupt loss of refining capacity and the increased need for imported fuel to compensate is likely to create new risks for stable fuel prices and supply. Keeping in-state and imported fuel competitive will be an important balancing act moving forward, because if the cost of refining fuel in state exceeds the cost of importing fuel, it could further accelerate additional petroleum refinery exits.

Collaboratively, we must harmonize regulations and processes to maximize market-driven solutions and continue to advance State policy goals. By doing so, the State can ensure safe and reliable operations through an orderly, managed transition of the petroleum sector that safeguards California consumers, workers, communities, and the environment.

Since receiving your April 21, 2025 letter, my office has continued its engagement with the cross-agency Petroleum Strategy Task Force, other relevant state and local regulators, industry, and impacted stakeholders and communities. Drawing from this engagement and lessons learned from energy transition challenges in other sectors nationally and internationally, we have identified both risks to fuel supply and

opportunities to support a managed transition in the transportation sector. Our office recommends the pursuit of three concurrent strategies:

1. Stabilize fuel supply through imports of refined fuels and maintaining in-state refining capacity.
 - a. Support necessary import of refined fuel products (such as California-specific gasoline) by addressing regulatory and permitting issues that limit import capacity.
 - b. Retain in-state petroleum refining capacity where possible to maintain resilience of the transportation fuels system.
2. Provide sufficient confidence to industry to invest in maintaining reliable and safe infrastructure operations to meet demand.
 - a. Stabilize in-state crude oil production and distribution to bolster supply for California refineries and support the petroleum fuels system.
 - b. Implement near-term statutory and regulatory changes that improve investment confidence while advancing state policy goals.
 - c. Strengthen coordination across state, regional, and local authorities, communities, and stakeholders to inform policy implementation.
3. Develop and execute a holistic transportation fuels transition strategy.
 - a. Implement a suite of policies and programs to ensure environmental, public health, labor, economic, and consumer protections for a successfully managed transportation fuels transition.

The recommendations laid out in this letter reflect the complexity of the issue, input from a multitude of stakeholders, and a faithful synthesis of robust data and discussions. We believe that these actions are necessary as the State considers its next steps in the clean energy transition.

Introduction and Background:

Over the past two decades, California has embarked on a transformative effort to decarbonize its economy. Through pioneering climate and air quality policies, the state has:

- Catalyzed the development of clean energy technologies,
- Fostered new clean energy industries employing tens of thousands of Californians,
- Decreased annual gasoline demand by more than 2 billion gallons (13.4%) in 8 years,
- Replaced more than 2 billion gallons of fossil diesel with renewable diesel, resulting in nearly 72% of diesel needs met by renewable diesel,
- Increased zero emission vehicle (ZEV) adoption from an annual rate of 7.8 percent new vehicle sales in 2020 to over 25 percent in 2024, and
- Made significant progress in improving air quality for communities across the state, including reducing over 77,500 tons of NOx since 2016.

As a result of the Low Carbon Fuel Standard (LCFS), the variety of transportation fuels and consumer choices have increased including rapid deployment of renewable diesel and zero emission infrastructure and will reduce fuel costs for Californians per mile by 42% translating to savings of over \$20 billion in cost savings by 2045.

At every inflection point—whether driven by market changes, climate and public health imperatives, national and global policy shifts, or technological breakthroughs—California has enacted forward-looking policies, regulations, and processes to continue advancing its decarbonization goals while prioritizing affordability, safety, and reliability.

Now, as the transportation sector enters a new phase in its transition, marked by rapid changes in the petroleum fuels system, California needs to once again continue to evolve its strategy to ensure success. If a lack of proactive management during this phase of the transition leads to rising energy prices and less reliable fuel supplies, that instability could erode support for continued decarbonization. We must take the necessary steps to chart a path for an orderly and safe transition away from legacy

petroleum-based systems that maintains system reliability, protects communities, workers, and consumers, and continues to advance the state's decarbonization trajectory.

Shifts in Petroleum Fuel Supply: A Global Issue and Californian Opportunity

California's petroleum value chain is complex and must be considered holistically in managing the transportation fuels transition (Figure 1). It supplies gasoline, diesel, jet fuel and other petroleum derivatives, and consists of interdependent activities and infrastructure that include:

- Upstream activities related to production of crude oil,
- Mid-stream activities related to gathering, storing, processing, and transporting petroleum products, and
- Downstream activities related to refining and distribution, marketing and sale of refined products.

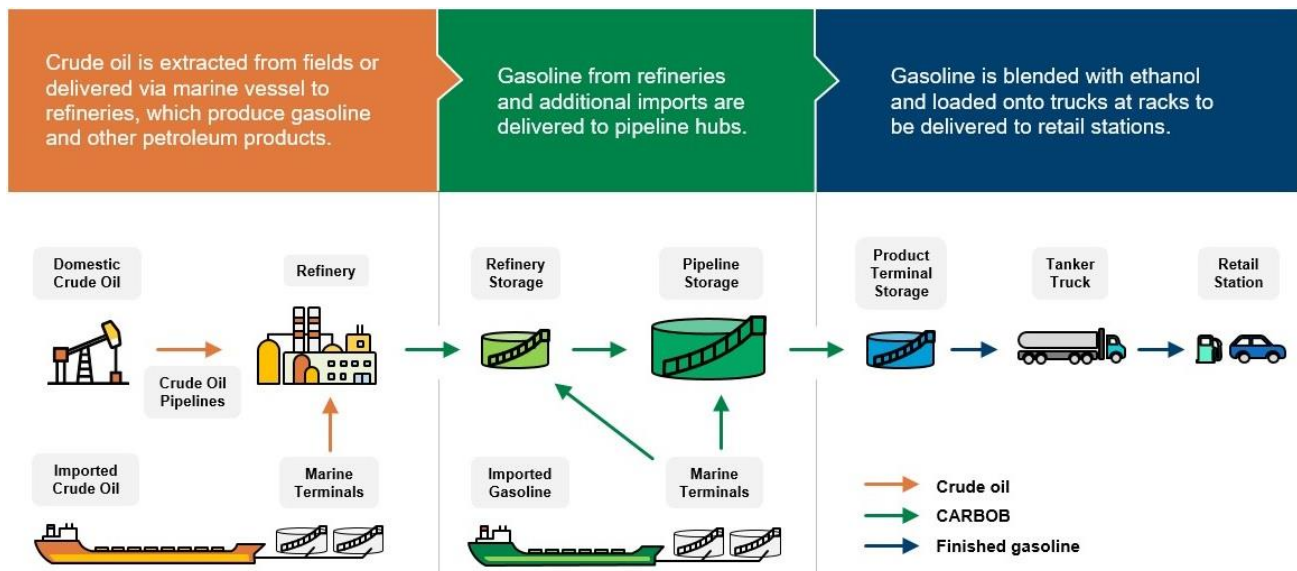


Figure 1. The petroleum value chain is complex and interdependent, and policies should consider the system holistically. Investments across the value chain are necessary for a managed decline.

California currently imports over 75% of its crude oil to meet the demand of in-state petroleum refineries and about 10-20% of its gasoline from out-of-state and foreign sources, depending on refinery maintenance

activities. Gasoline imports statewide could increase to 25-35% of demand by the summer of 2026, and up to 50% in the northern California region after the announced anticipated refinery closures, bringing risk of supply disruptions and price volatility. The interdependent elements of the petroleum-based system therefore cross state and national boundaries and contain critical vulnerabilities tied to changes in local, state, federal, and international policies, markets, and events.

A wide range of factors affecting the petroleum value chain are accelerating the decline and consolidation of the refining industry in many U.S. states, as well as developed economies across the globe. One in five refineries globally risk shutdown by 2030². Across the nation, petroleum refiners face the conjoined challenges of rising operating costs, softening demand for some refined products, and competition from newer, more efficient mega-refineries in other countries. Geopolitical events and changing federal and foreign government policies are also impacting industry decisions. Further, many national petroleum refineries, including some in California, are well over 100 years old and require substantial financial investments to maintain safe and reliable operations. In recent years, these factors have driven the closure of petroleum refineries in places as diverse as Australia, the United Kingdom, and multiple states, including some that have been perceived as especially profitable settings, like Texas.

As a result of such factors and as California's policies continue to drive down demand for petroleum-based fuels, California's in-state petroleum refining capacity has been declining faster than its demand for refined petroleum products and has been supported by increase in imports of refined products. Future trends are uncertain: recent federal actions and policies, including undercutting California's clean air standards and its impact on ZEV adoption combined with global conflicts (currently, about 30% of crude supply to California's refineries comes from the Middle East), are creating further uncertainty in both in-state demand for refined gasoline and global petroleum markets. To prevent a further exacerbated imbalance of supply and demand from harming Californians—whether through disrupted fuel supply, insufficient facility maintenance, or ongoing pollution threatening public health—and to maintain resilience in the

² Wood Mackenzie (2025). *Global 2035 refinery closure threat update: Which assets are most at risk of closure?*. <https://www.woodmac.com/news/opinion/global-refinery-closure-outlook-2035/>

system in light of ongoing uncertainty, the State must actively manage the decline of its legacy petroleum-based systems while maintaining affordable, reliable, safe, and equitable access to transportation fuels statewide.

Proactively Navigating the Challenges of the Mid-Transition

California is entering a pivotal and challenging phase of decarbonization described in scholarly work as the “mid-transition,” in which the demand for the incumbent petroleum-based system, while declining, remains substantial, and the clean alternative fuels, continue to scale up³ (Figure 2). Over the past five years:

- Two Californian refineries, Marathon Martinez and Phillips 66 Rodeo, have converted to producing renewable fuels —transitions that support the State’s shift to cleaner, less carbon-intensive fuels, but that have also reduced gasoline refining capacity in the state.
- Phillips 66 has announced its intent to close its Wilmington refinery in the fourth quarter of 2025. Phillips 66 has committed to working with California to maintain or increase levels of supply to meet consumer needs, including through imports⁴.
- Valero has announced its intent to idle, restructure, or cease refining operations at its Benicia refinery by the end of April 2026.

³ Grubert and Hastings-Simon (2022). *Designing the mid-transition: A review of medium-term challenges for coordinated decarbonization in the United States*. WIREs Climate Change. <https://doi.org/10.1002/wcc.768>

⁴ <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>

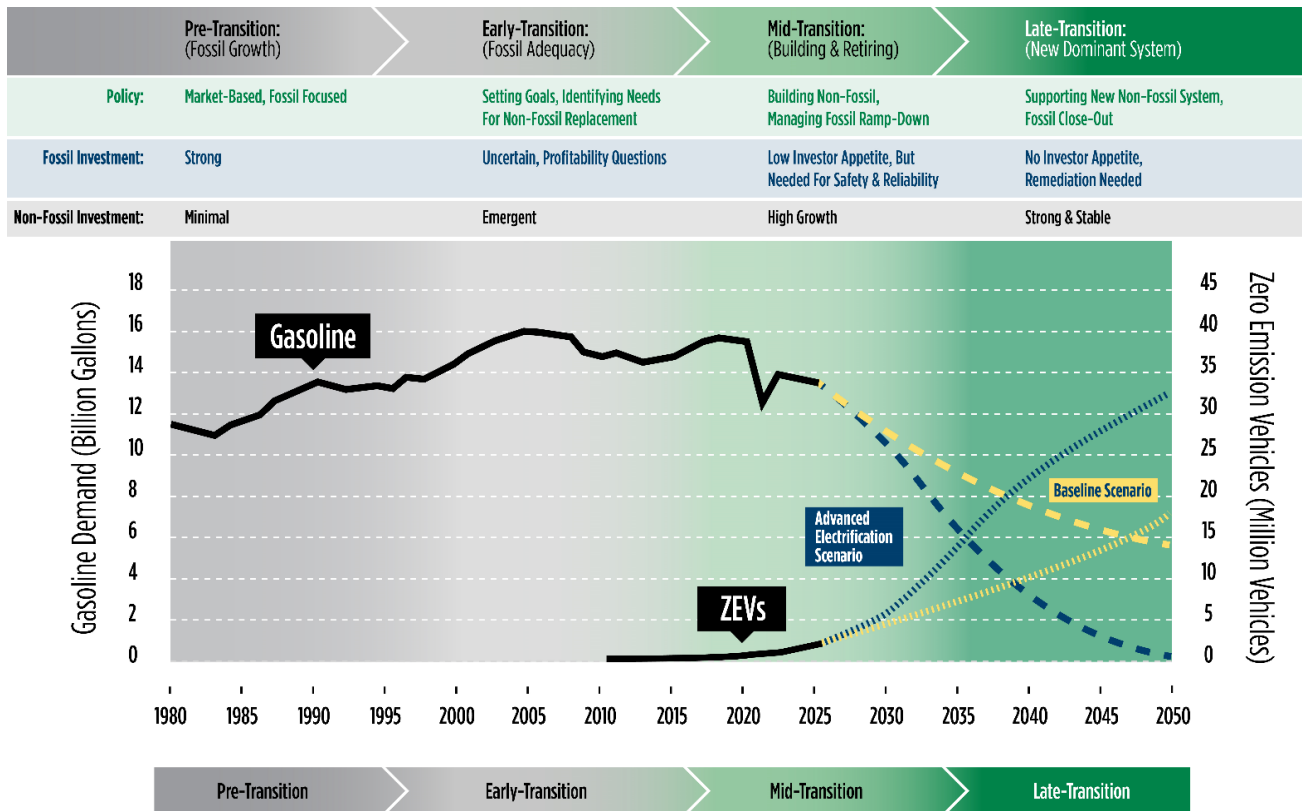


Figure 2. California has entered the mid-transition, a critical phase in which the State must not only support the growth of new clean energy systems but also manage the phase-out of their fossil-fueled predecessors. The CEC's 2024 Integrated Energy Policy Report (IEPR) includes two scenarios for gasoline demand and ZEV adoption: a baseline scenario and a higher transportation-electrification scenario.

To ensure energy reliability and economic stability, sustained investments in both legacy and emerging infrastructures are essential during the mid-transition to support the totality of market needs. Sudden and unmanaged exits of critical legacy energy infrastructure can have significant negative impacts on energy security, local governments, worker safety, consumer prices, public health, environmental protection, and the communities that depend on jobs and revenue from those industries.

To protect consumers, frontline communities, workers, the economy, and the environment, California's policies must simultaneously achieve two objectives:

1. Accelerate deployment of renewable and low-carbon technologies to sustain decarbonization momentum.
2. Establish clear mechanisms and incentives to keep legacy petroleum-based assets safe, reliable, and affordable until the new clean energy system can fully replace them.

Current analysis suggests that under today's market and regulatory conditions, California faces the prospect of continued reduction in in-state petroleum refining capacity that outpaces demand decline for petroleum-based fuels and closures of other critical parts of the state's petroleum-based fuel value chain. Without a clear, state-led transition pathway, these sudden exits create a very real risk of severe price spikes, supply constraints, and long-term liabilities at sites. The industry is likely to become more heavily concentrated with fewer but more powerful incumbent firms. Given sufficient time, the petroleum market is likely to find a new equilibrium following the disruption of a refinery closure, but in the near term, an abrupt loss of refining capacity and the increased need for imported fuel to compensate is likely to increase price volatility. Keeping in-state and imported fuel competitive will be an important balancing act moving forward, because if the state's regulatory paradigms lead to the cost of refining fuel in state exceeding the cost of importing fuel, it could further accelerate additional refinery exits.

By contrast, proactive state policy can not only prevent these potential severe risks, but also achieve a just, least-cost transition to clean energy, while securing major benefits for frontline communities, consumers, petroleum industry workers, and the environment. It will be increasingly important to foster a competitive market open to all. Adjusting conditions that help steer the market in ways that align decline in California's petroleum-based fuel production with in-state and regional demand can also make California's energy systems more resilient in an increasingly unstable national and international context.

These market adjustments must also align with California's trailblazing climate policies. The State's longstanding commitment to protecting air quality, public health, and the environment, as well as recent actions to enhance consumer protections against gasoline retail price spikes, provide a strong foundation on which California can solve the interlocking challenges of the mid-transition. By learning the lessons of past industrial transitions and of refinery closures around the country and the world,

California can once again chart a groundbreaking policy path—this time, for the safe, effective, and necessary transition away from petroleum-based fuels.

In designing policies to manage the decline of California's petroleum fuel system, policymakers face a set of interlocking issues that must be addressed together to support a successful transition:

Reliability and Affordability of Supply: California faces an unusually tight set of constraints on its access to supplies of crude oil and refined petroleum products. Geography and the state's long energy history both largely limit the state to in-state production and marine imports. To combat air pollution and meet federally required air quality standards, California has also long used a specialized gasoline blend that is produced by a limited number of refineries worldwide. Domestic demand for this gasoline already outstrips in-state refineries' cumulative capacity. Under these supply constraints, even a single refinery outage can lead to gasoline price increases.

Increasing marine imports of gasoline to replace lost supply especially in the near term can be costly, slow, and constrained by bottlenecks in import infrastructure. Imports also introduce new vulnerabilities into the fuel supply by making the State more exposed to impacts of geopolitical events, external markets, and regulatory changes in other jurisdictions. Nonetheless, California is likely to become more dependent on imports of refined fuels if the decrease in in-state refining capacity continues to outpace declining demand and proactive planning is needed.

Safety and Reliability of Infrastructure: Petroleum refineries are high-hazard infrastructure that require regular investment in maintenance to protect workers and communities from accidents. Without policy intervention, declining capital inflows could lead to deferred maintenance and heightened dangers. Petroleum refinery accidents can pose grave health risks to workers and residents in the vicinity, and unplanned events impact fuel supply and retail prices, as well as impose unanticipated costs on petroleum refiners, potentially leading to sudden or accelerated closures. For example, Pennsylvania's PES Refinery closed suddenly in 2019 after a major explosion caused by a corroded 50-year-old pipe. Releases and spills can permanently damage entire ecosystems, with acute and chronic public health, ecological, and economic consequences, including potentially many hundreds of millions of dollars in remediation

per site and long-term withdrawal of land from other beneficial uses. It is imperative that refinery operators make necessary investments in refinery maintenance on a timely basis throughout the transition.

Employment Security: Recent petroleum refinery conversions and exits have revealed challenges for displaced workers in finding comparable employment. Workers across the petroleum value chain, including crude oil extraction, similarly face continued job losses and difficult hiring conditions in a declining field. These workers' skills will remain critical for maintaining safe and reliable fuel supplies throughout the duration of the energy transition. Moreover, existing skilled refinery craftsmen are leaving the state to seek similar work in other markets, reducing the experience level of the California petroleum refinery workforce. To retain these workers and their skills, state policy should help ensure that work remains safe and that job transitions are meaningfully supported.

Community Impacts: Petroleum refineries and other elements of the petroleum-based fuel system play significant roles in local economies but also impact the health and safety of fenceline communities. Many examples show that industrial decline can damage community safety, health, and the environment. Because fenceline communities are often dependent on their industrial facilities' tax payments, payrolls, and value chains, a single industrial closure can hollow out the local economy in ways that are very difficult to absorb. Proactive planning and resources will be necessary to prepare communities for a future without petroleum industry, including refineries, and to ensure that fossil fuel-related legacies do not cause new harm.

Smooth Transition for Successful Decarbonization: The many risks posed by an unmanaged clean energy transition also threaten California's continued climate progress. If energy prices rise and fuel supplies become less reliable during the mid-transition, support for continued decarbonization may erode. By contrast, creating clear, transparent, long-term plans for the phase-out of petroleum infrastructure can give the public confidence in the trajectory of state climate policy and create space for industry, state and local governments, and community groups to find least-cost, least-harm solutions to tackling the clean energy transition.

Strategies and Recommendations:

Many impacted stakeholders, including representatives from industry, labor, environmental and environmental justice organizations, and state and local agencies continue to engage with the CEC in productively discussing the interlocking challenges of the clean energy transition. While not all groups align in their preferred strategies to address these challenges, there has been shared recognition of different constituencies' priorities and common goals. A holistic solutions framework developed from this consultation guides this response.

The cross-agency Petroleum Strategy Task Force has additionally provided valuable insight and recommendations for addressing these complex and cross-jurisdictional issues. Building off these engagements, lessons learned from transition challenges in petroleum and other sectors nationally and internationally, and previous work including the CEC's Transportation Fuels Assessment, the CEC has identified needs and opportunities to support affordable, reliable, equitable, and safe fuel supply through a managed transportation fuels transition that pursues three concurrent strategies:

1. Stabilize fuel supply through imports of refined fuels and maintaining in-state refining capacity.
2. Provide sufficient confidence to invest in maintaining reliable and safe infrastructure operations to meet demand.
3. Develop and execute a holistic transportation fuels transition strategy.

Solving the challenge of transportation fuel transition will require state policymakers to pursue solutions that achieve these three objectives together, including near-term stabilization actions as well as long-term holistic transition solutions, and that advance the state's commitment to its overarching priorities.

Strategy 1: Maintain capacity to stabilize fuel supply

TOPLINE: *The CEC thinks it is prudent to immediately stabilize in-state supply by working to retain in-state refining capacity while demand persists, and by supporting sufficient imports, storage, and delivery of refined products.*

PROBLEM: In-state petroleum refining capacity is declining faster than gasoline demand and the abrupt exit of a refinery has numerous consequences to consumers, workers, and communities. Northern

California is already experiencing a net regional shortage in refining capacity and is particularly vulnerable if the State fails to maintain existing Northern California refinery operations in the near term and upgrade the import infrastructure capabilities at Bay Area ports. Due to previously enacted legislation, the state receives a one-year notice prior to petroleum refinery operational changes that helps the State plan for the decline in refining capacity. To support system resilience as in-state refining capacity declines, the State needs to receive sufficient and timely volumes of marine-imported fuel.

1a: Supporting Imports of Refined Products

Background:

Crude oil, gasoline, jet fuel, and other petroleum products are imported into California via marine oil terminals, primarily at the Ports of Long Beach and Los Angeles and in the San Francisco Bay region that includes San Pablo Bay and Carquinez Strait. Gasoline refining capacity in California is already insufficient to meet demand, with the shortfall increasing during refinery maintenance events. The shortfall must be made up through marine imports of refined product. To keep fuel supply and prices stable, the import process must be efficient and surge capacity must be preserved. Investments in third-party marine oil terminals, facilities where oil and petroleum products are stored, are key to incrementally increasing import capacity; these terminals are not associated with one individual refiner and can be utilized by multiple market participants, which in turn increase market competition and protects consumers. Greater import capacity will be necessary to maintain resilience in the system as refining capacity in California continues to fall.

Permitting delays and investment uncertainty can be barriers to repairing, optimizing and increasing import, storage, and delivery capacity – in some instances, permit delays can obstruct project completion by months or years. While the rate at which import reliance will increase is uncertain, State action is needed in the short term to make sure California has an adequate supply of fuel to reliably and affordably serve demand. Projects that increase import capacity, without permitting delays, can take anywhere from three to 24 months, with most projects such as dock improvements or pipeline modifications taking between 12 and 18 months. Specific challenges and opportunities to increase capacity and efficiency vary by location and facilities.

Recommendations:

- Support confidence for the private sector to invest in import, storage, and delivery infrastructure through sector-wide regulatory coordination (see Strategy 2).
- Address regulatory and permitting issues to import capacity and efficiency, especially in regions with major refining capacity loss.
- Establish an interagency workgroup that includes the CEC, the State Lands Commission, relevant Air Districts, local governments, and ports to develop a plan to improve coordination, establish clear lines of communication to prioritize critical energy infrastructure projects, enhance early public engagement, and identify efficiencies and reduce redundancies in permitting.
- Explore ways to increase the throughput capacity of third-party terminals to receive and distribute gasoline and jet fuel.

1b: Prudent Retention of In-state Refining Capacity

Retaining in-state refining capacity while demand for refined fuel persists supports the resilience of the transportation fuels system in California. It can also maintain employment and local revenue while giving workers and communities time to plan for the future.

The CEC is engaging with market players to explore strategies to retain operations at existing refineries.

Strategy 2: Provide sufficient confidence to industry to invest in maintaining reliable and safe operations to meet continued demand

TOPLINE: System-wide needs must be addressed in the near term to protect consumers and fenceline communities and ensure needed investments are made to safely meet demand while achieving climate goals and public health protective standards.

PROBLEM: Increasing petroleum business uncertainty in California is leading to reduced industry confidence to invest in the state as they continually seek other, higher-return opportunities. This has prompted company decisions to discontinue operations in California, especially when faced with significant investment decisions (e.g. refinery turnarounds) and uncertain future returns on those investments. Disinvestment in fossil infrastructure with closure on the horizon poses risk to safety and reliability. Due to the interdependencies of the petroleum

value chain (up-, mid-, and downstream), disruptions can have widespread consequences to the entire system (Figure 1). Additional closures and operational challenges elsewhere in the value chain (e.g. viability of crude oil pipelines with low throughput volumes) are likely in the near term and inevitable in the long term.

Industry participants have identified several intersecting regulatory and administrative issues in maintaining system-wide stability: crude oil extraction and delivery, CEC's regulatory tools, At-Berth regulations, Cap-and-Trade, and issues related to other regional, state and local authorities. CEC continues to engage with a wide range of impacted stakeholders and communities to discuss these issues and possible solutions. While not all groups are unified in their preferred approach to these challenges, there has been general recognition of the benefit of a holistic approach and strategically aligning state and local regulation of the petroleum system to support the achievement of state goals and priorities.

In consultation with industry, labor, fenceline communities, and the cross-agency Petroleum Strategy Task Force, the CEC has identified a suite of measures to bolster confidence in the California market and ensure reliable and safe operations during the transportation sector's mid-transition. These measures are organized into two tiers:

- Tier 1 – Immediate Actions: Options for near-term adoption via administrative directives or statutory modifications.
- Tier 2 – Further Exploration: Options requiring additional analysis, stakeholder consultation, and impact assessment before implementation.

Tier 1: Issues to Prioritize for Immediate Action

1. Stabilizing In-State Crude Oil Production and Distribution.

Background:

Crude oil production in California in recent years has dropped far faster than demand from in-state refineries, largely because of California Environmental Quality Act (CEQA) litigation that stalled crude oil production permitting in Kern County. That decline in in-state crude oil production has forced a shift toward increased foreign and Alaskan crude oil imports. This rapid decline in crude production introduces several challenges that include:

- *Refinery Adaptation Challenges and Cost Pressures:* Many California refineries were engineered for the specific qualities of local crude oil. Several refineries are not logistically well set up to receive waterborne imported crude. Without retrofit investment, they incur higher processing costs and reduced efficiency when processing imported crude.
- *Pipeline Throughput Decline and Infrastructure Risk:* California has a network of pipelines, primarily in Kern County, that deliver crude oil to in-state refineries. Reduced in-state crude production has driven several crude pipelines to shut down due to low throughput. Several remaining crude oil pipelines now run intermittently due to low volumes, inflating crude transportation costs.
- *Exposure to Geopolitical Risks:* Relying heavily on imported crude oil ties California's energy security to volatile foreign-policy dynamics and geopolitical tensions.
- *Economic and Fiscal Impacts:* The contraction in domestic crude oil production erodes high-wage jobs and shrinks local tax bases, placing additional strain on oil-dependent communities and public services.

Recognizing the interdependence between in-state crude oil production and related critical infrastructure across the petroleum value chain, we think it is prudent to stabilize in-state crude production to support resilience in the petroleum system.

Recommendation:

As part of a managed transition strategy, we recommend that the State take action to achieve targeted stabilization of crude oil production in California to supply in-state refineries while ensuring that production is consistent with critical health and environmental protections. Specifically, limited production that is needed to achieve targeted stabilization should be prioritized in existing established, and densely developed oilfields, and outside of Health Protection Zones (HPZs) surrounding homes, schools, and other sensitive receptors where new permitting is prohibited by law; and production should not include methods that are prohibited by important environmental protection laws, such as California's ban on new offshore oil and gas leases and California's ban on well stimulation treatments.

The Legislature may wish to consider, for example, statutory changes to declare the Kern County Zoning Ordinance Second Supplemental Environmental Impact Report (SCH20130879) in compliance with CEQA and conclusive for purposes of its use by responsible agencies to allow the County's ministerial approval of oil and gas wells with the mandatory mitigation measures identified in the ordinance. This change would allow for a more appropriate amount of extraction in Kern County's well-established oil fields. While clarifying that oil extraction on those already-disturbed lands, away from neighborhoods, is permissible, the Legislature may also wish to expand the current limitations on new offshore oil and gas development and codify the ban on well stimulation treatments in statute.

Additional legislative or administrative actions could include a targeted regulatory framework that ties crude production and permitting more directly to demand over the transition period. The objective would be to facilitate more timely, predictable, and legally durable permitting for crude oil production outside of HPZs in established, densely developed oilfields coupled with a requirement to permanently seal at least two wells for each new well drilled – one located in that same oilfield and the other located in an HPZ. This would facilitate a managed production decline that aligns with and adapts to declining demand throughout the transition to create more certainty, maintain critical infrastructure investment, and protect consumers, workers, and fenceline communities.

2. Regulatory Tools.

Background:

Several intersecting regulatory authorities supporting the achievement of the State's climate, public health, and consumer protection priorities impact the petroleum industry. Strategic implementation of the State's suite of regulatory tools can support the necessary investment confidence to retain safe and reliable industry operations and achieve policy goals.

To protect California consumers from extraordinary spikes in retail gasoline prices, such as those during 2022 and 2023, you called for two special sessions of the Legislature in 2023 and 2024 resulting in the passage of SB X1-2 (Skinner, Chapter 1, Statutes of 2023 First Extraordinary Session) and AB X2-1 (Hart, Chapter 1, Statutes of 2024 Second Extraordinary Session). These efforts collectively:

- Expanded the CEC's data collection authority that significantly increased transparency into various aspects of the petroleum market and helped identify the key factors that contribute to fuel price volatility;
- Created a new independent market oversight division, the Division of Petroleum Market Oversight (DPMO), responsible for oversight, investigations, economic analysis, and policy recommendations regarding the transportation fuels market;
- Required development of two planning efforts 1) an assessment of California's transportation fuels market with potential strategies to address price spikes, and 2) a Transportation Fuels Transition Plan with CARB; and
- Provided CEC with new regulatory authorities to mitigate retail gasoline price spikes and protect consumers: establishing a maximum gross gasoline refinery margin (GGRM) and penalty, setting minimum inventory requirements for refiners, and establishing resupply requirements for planned refinery maintenance events.

The Legislature required that CEC engage in careful consideration of the impacts to consumers and the petroleum sector from implementing the new regulatory authorities. The CEC has exercised caution by focusing on gathering the necessary information to develop a holistic view of the petroleum value chain and establishing the best ways to protect consumers during this transition. The CEC has exercised caution by focusing on gathering the necessary information to develop a holistic view of the petroleum value chain and establishing the best ways to protect consumers during this transition.

To protect the public health of local communities near ports, CARB adopted its at-berth regulation in 2007 to address emission reductions from ocean-going vessels when they are docked at California ports. The regulations were most recently amended in 2020 and of January 2025, crude oil and petroleum product tankers at the Port of Los Angeles and the Port of Long Beach are subject to the regulation.

The majority of tanker industry partners are complying with the regulation through one of two approved pathways: (a) the Innovative Concepts, an alternative compliance approach that applies the emissions reductions from approved projects towards vessel visits, or (b) the Remediation Fund, used as an interim solution until their chosen primary control

technologies—such as shore power or barge-based capture systems—are installed. One barge-based system for tankers has received CARB approval, with additional systems under review. Small terminals may comply under the low-use exception or by using the Remediation Fund in combination with barge-based systems or shore power as approvals are finalized. While systems are undergoing approval, capture and control companies can offer research exceptions to vessel and terminal operators for participating in testing. Tankers will be subject to the regulation at all ports as of January 2027.

AB 32 (Nuñez, 2006) enables CARB to implement programs that are globally recognized as cost-effective tools for reducing carbon pollution and for generating billions in proceeds to support investment in innovative and pollution-reducing projects. One of these tools is the Cap-and-Trade program, which was officially launched in 2012 and carefully balances the steady decline of greenhouse gas emissions, provides utility ratepayer benefits through the climate credit, and provides industry credits to mitigate for leakage. Petroleum market participants are regulated entities under the Cap-and-Trade program.

Recommendation:

- The CEC believes that its available refinery regulatory tools should be implemented holistically and prudently to maximize consumer benefit and avoid unintended consequences. The CEC's analyses have demonstrated a relationship between California's volume of gasoline inventory ("days of supply") and retail prices, whereby low inventory volumes are associated with higher retail prices. The CEC sees value in continuing to assess, in collaboration with the industry, how the resupply and minimum inventory strategies could be implemented to promote market liquidity during refinery outages and stabilize prices.

The CEC has determined that additional analytical work is necessary to establish a maximum GGRM and to impose a penalty for exceeding it that would protect California consumers as intended.

In order to prioritize CEC's development and implementation of the resupply and/or minimum inventory regulatory tools, we recommend that the CEC adopt a pause for a reasonable length of time on implementing a maximum GGRM and penalty.

- We recognize that there are challenges in technological compliance specifically for tanker vessels and that the regulation can add unanticipated cost and operational burden. We recommend that you request that CARB meet with each refiner and terminal covered by the at-berth regulation and discuss current status and barriers to implementation of all technical tools intended to achieve emissions reductions from tankers at berth to assess the timelines for deployment of those emissions reductions.
- We recommend that the Air Resources Board continue to work on the regulatory process for continued implementation of the Cap-and-Trade program, including progress towards required targets, cost containment strategies and minimizing leakage.

Tier 2: Issues for Further Exploration

3. Local and Regional Authority.

Background:

Petroleum infrastructure is subject to various local and regional regulations and often requires permits from a variety of local agencies.

In California, the local air districts have primary authority to regulate all non-mobile pollution sources of air pollution, including stationary sources. This means that local air districts are responsible for adopting regulations to reduce emissions from stationary sources, such as refineries, and for permitting of these sources. All districts with refineries have adopted, implemented, and are enforcing regulations to reduce emissions from the refineries. The regulations reflect the air quality issues in each area and aim to address criteria pollutant emissions in order to comply with the federally enforceable State Implementation Plan, and toxic emissions that impact local communities. The district permits generally require facilities to be in compliance with all applicable regulations, depending on the district and the facility type.

Industry has asserted that the stringency, inconsistency, and compliance costs of air quality requirements placed on refineries, along with extended permitting timelines at air districts and other local and regional agencies, pose uncertainty and risk to their longer-term planning. Industry also has asserted that the potential for new local taxation, fees, and regulatory initiatives causes significant investor uncertainty.

Recommendation:

As noted above, we recommend the formation of an interagency working group to address immediate coordination challenges. In addition, we recognize the importance of working with the Legislature and local stakeholders to address concerns. We think the Administration should consider partnering with the Legislature to advance solutions to strategically align regulations and permitting processes across all levels of government that could best support achievement of State policy goals.

Strategy 3: Holistic Transition Strategy

TOPLINE: Near- and medium-term actions must be part of a holistic transition strategy that is built on shared understanding, collaboration, and development of policies across state agencies and stakeholders. A managed transition is critical for protecting Californians and will depend on coordination and collective action.

PROBLEM: Transitioning California's transportation fuel system away from petroleum-based fuels is providing substantial benefits to consumers, workers, communities, and the environment, but an unmanaged transition poses significant and acute risks to safety, health, environment, economy, and affordability.

While concurrently addressing the previous objectives, the State should implement policies and plans to support a successful transition, which could include:

- Identify and pursue necessary transition funding to support climate, health, community, and worker priorities.
- Protect workers and communities such as through robust process safety management regulations at refineries, which has the added benefit of increasing reliability of the facilities.
- Support and protect California's authority to set emission standards and achieve climate goals.
- Further California's ability to diversify and evolve its transportation sector to comply with federal and state air quality standards and meet climate goals, such as by continuing to expand the availability and reduce the cost of ZEVs.
- Identify challenges, opportunities, and strategies for the future of land affected by the transition (e.g. remediation, marketability, and

value), such as Asset Retirement Obligations and standards for refinery remediation and decommissioning plans.

- Evaluate whether new approaches to California's fuel specifications could continue to protect public health and meet federally required air quality standards while making the State more resilient to disruptions during its fossil fuel transition.
- Continue to evaluate additional options presented in the Transportation Fuels Assessment, e.g. product reserve and production enhancement strategies such as E15 or Reid Vapor Pressure (RVP) modification.
- Explore further pathways to increase resilience in the system, such as improving connectivity between Northern and Southern California fuel markets, e.g. through increased marine oil terminal capacity or repurposing of existing fossil fuel transportation infrastructure.
- Develop strategies that can support a managed phase-out especially during the late transition phase of the transportation sector, such as state management or ownership of assets.

Conclusion

The problems laid out in this letter are complex but solvable. California has entered a critical but challenging phase in its transition to a decarbonized transportation sector, which is made more challenging by California's unique petroleum market, global changes in the refining sector and across the petroleum value chain, and new disruptions at the federal level. The strategies and recommendations laid out here represent our careful, comprehensive, collaborative assessment of the petroleum market and the future of the clean energy transition.

Thanks to your leadership and commitment and the expertise of agencies, stakeholders, and communities, California is rising to the challenge. Equipped with new data made available by forward-thinking policies led by you and the Legislature in the past two years, we have a much clearer understanding of the causes of gasoline price spikes and the strategies needed to protect consumers and communities in the future. We are working closely with a broad range of partners to continue to evolve the State's approach so that we may successfully 1) accelerate momentum to decarbonize California's economy, and 2) ensure that

petroleum firms can continue to supply petroleum-based fuels while the clean, alternative fuels continue to scale.

We are thankful for the opportunity to share this analysis with you, the Legislature, our partners, and the public. We look forward to collaborating with the Legislature, state and local agencies, industry partners, and impacted stakeholders to ensure a reliable, affordable, and safe clean energy future for all Californians.

Sincerely,

A handwritten signature in black ink that reads "G. S. Gargadher". The signature is written in a cursive, slightly stylized font.

Siva Gunda
Vice Chair
California Energy Commission