

DOCKETED	
Docket Number:	23-SB-02
Project Title:	SB X1-2 Implementation
TN #:	256465
Document Title:	WSPA Comments on CEC DRAFT Transportation Fuels Assessment
Description:	N/A
Filer:	System
Organization:	Western States Petroleum Association
Submitter Role:	Public
Submission Date:	5/17/2024 4:46:04 PM
Docketed Date:	5/17/2024

*Comment Received From: Western States Petroleum Association
Submitted On: 5/17/2024
Docket Number: 23-SB-02*

WSPA Comments on CEC DRAFT Transportation Fuels Assessment

Additional submitted attachment is included below.



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May 17, 2024

California Energy Commission

Docket Unit, MS-4

Docket No. 23-SB-02

715 P Street

Sacramento, California 95814

Uploaded to CEC Docket #23-SB-02

RE: SB X1-2 Draft Transportation Fuels Assessment

Thank you for the opportunity to comment on the California Energy Commission's (CEC) "Draft Transportation Fuels Assessment" (CEC-200-2024-003-D), published on April 12, 2024, and the focus of the CEC workshop on May 3, 2024.

WSPA is a non-profit trade association representing companies that import and export, explore, produce, refine, transport, and market petroleum, petroleum products, natural gas, and other energy supplies in California and four other western states, and has been an active participant in transportation fuels planning issues for over 30 years.

The CEC's Draft Transportation Fuels Assessment is a reasonable initial draft and recognizes California's fundamental structural gasoline supply challenges – but much work is left to be done.

With the Draft Transportation Fuels Assessment (herein referred to as Draft), the CEC, working with the California Air Resources Board (CARB), has provided the public with a useful primer on the California liquid transportation fuels system, focused primarily on gasoline. The description of the realities of the California transportation fuel system makes adequate reference to both the structure and the structural risks associated with refining and distributing liquid fuels in the State.

In the Draft's Executive Summary, the CEC acknowledges the basic reality of California's gasoline supply dynamics: California's constrained local refining capacity, limited number of available local suppliers, regionalized supply chains, reliance on marine transportation of fuel supplies, and stringent fuel specification requirements combine to make it a "fuel island" isolated from the rest of the nation's transportation fuels market. The limited number of spot market gasoline transactions in California also give the local spot market an outsized influence on California prices that is not seen elsewhere in the country. At the same time, the CEC emphasizes that "gasoline remains California's dominant transportation fuel" and demand will remain robust well beyond 2035. As the CEC correctly points out, "[t]hese vehicles will need fuel to operate, and many of the vehicles may be owned by lower income individuals and families, making it even more compelling to identify ways to ensure an affordable, reliable, equitable, and safe supply."¹

The first chapter describes the California "fuel landscape" and briefly dwells on market dynamics,

¹ Draft, p. ES-1

including price spikes and potential causes of disruption to the system. It emphasizes the mandate of Senate Bill (SB) X1-2 (2023) to the State agencies and explains how the CEC and CARB addressed this mandate in the Draft.

The chapter also focuses on anticipated changes to demand for fuels in the near future, and expectations of how the market will respond to declining demand. The declines in demand, according to the analysis, will be due in large part to the eventual electrification of the light duty vehicle fleet and anticipated reductions in vehicle miles traveled (VMTs) over time by gasoline engine powered vehicles. The chapter further explores pathways by which refiners might attempt to keep pace with declining demand and identifies “how the state might intervene to assure an affordable, reliable, equitable, and safe supply of gasoline for consumers who need it.”²

The second chapter undertakes a high-level “primer on petroleum” including crude oil sources and refining basics. The narrative attempts to give the public a very basic education on blendstocks, California gasoline requirements (such as California Reformulated Blendstocks for Oxygenate Blending (CARBOB)), and briefly explains the differences between summer and winter blends, based on Reid Vapor Pressure (RVP). The chapter concludes with another high-level discussion of the distribution system from refinery, to spot market, to retail, including brief discussions of spot markets and the differences between branded and unbranded gasoline sales at the pump.

Finally, a third chapter presents in very brief form about a dozen “policy options” for future consideration by the CEC for meeting the mandates in SB X1-2 to ensure market stability and benefits to consumers.

The Draft fails to address critical elements of the supply chain.

SB X1-2 directs the CEC to submit an assessment to the Legislature and to the Governor that “[i]dentifies methods to ensure a reliable supply of affordable and safe transportation fuels in California.”³ The statute further calls for “the evaluation of oil and gas extraction and refining”⁴, but this Draft only covers the supply of transportation fuels, primarily gasoline. A proper transportation fuels assessment must look at all current fuels, e.g., gasoline, diesel (petroleum and renewable), jet (petroleum and SAF), LPG, natural gas (CNG, LNG, and RNG), hydrogen (combustion and fuel cell), and electricity. Such an assessment should also review the entire value chain for each transportation fuel. For example, petroleum fuels segments would include upstream, pipelines, marine infrastructure, storage terminals, refineries, distribution, and retail service station networks, while a review of the electricity value chain would include generation, the grid (transmission and distribution), charging networks (industrial, commercial, single-family, multi-family), and zero-emission vehicle (ZEV) availability.

WSPA notes that the CEC had the resources in hand to include assessments for diesel and aviation fuel by using the same outlooks used for their gasoline assessment, as is reflected in the data presented in the 2023 Independent Energy Policy Report (IEPR).⁵ Each of these fuel sources

² Draft, page 17.

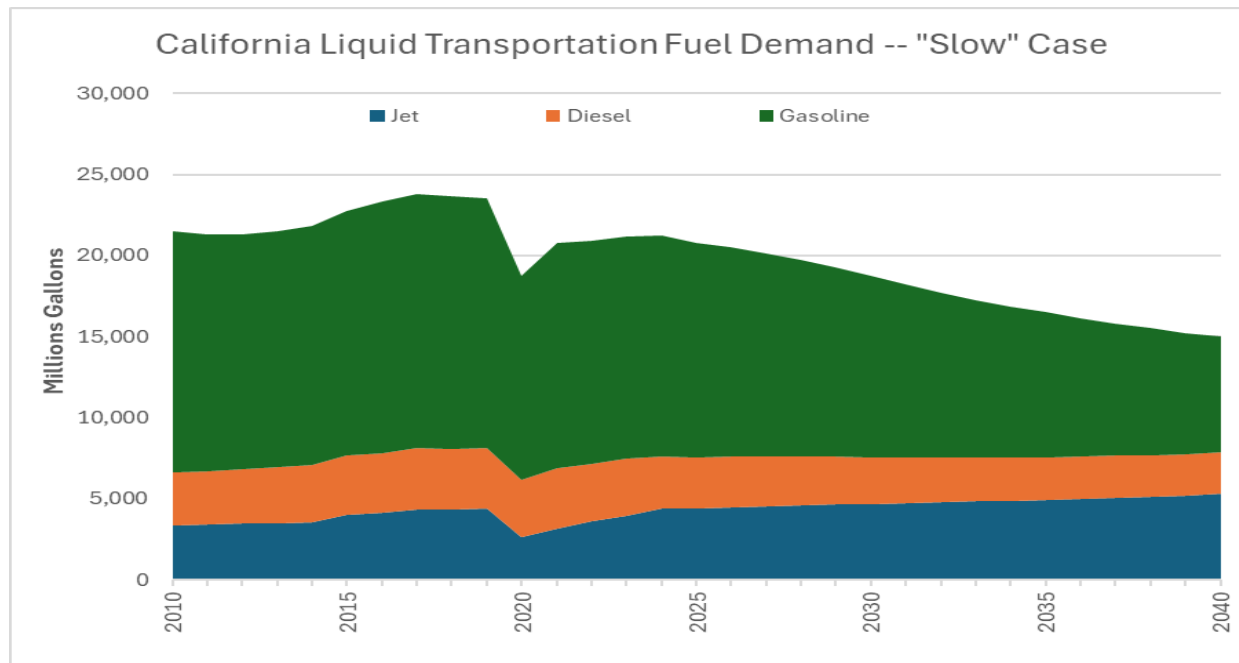
³ Cal. Pub. Res. Code (PRC) § 25371(a)(2)

⁴ PRC § 25371(a)(2)

⁵ Bailey, Stephanie, Jennifer Campagna, Mathew Cooper, Quentin Gee, Heidi Javanbakht, and Ben Wender. 2023. 2023 Integrated Energy Policy Report. California Energy Commission.

were analyzed under “slow”, “fast”, and “rapid” scenarios, in which key assumptions about declines in demand were made based on the CEC’s demand modeling. To remind the CEC of its earlier published work, we include graphs from the 2023 IEPR report and from the modeling data submitted as supplemental to the CARB 2022 Scoping Plan Update.⁶

Figure 1 - CA Liquid Transportation Fuel Demand - "Slow Case"



Publication Number: CEC-100-2023-001-CMF.

⁶ [2023 Statewide Fuel Demand Forecast - CA Energy Planning | California Energy Commission](https://www.energy.ca.gov/media/9574), last accessed May 14, 2024 at <https://www.energy.ca.gov/media/9574>. And from the Scoping Plan: [2022-sp-PATHWAYS-data-E3.xlsx \(live.com\)](#). Note: We concur with CEC’s aviation fuel assumption that it has the same demand profile as the IEPR baseline case.

Figure 2 - "Fast" = 2023 IEPR AATE3 Case

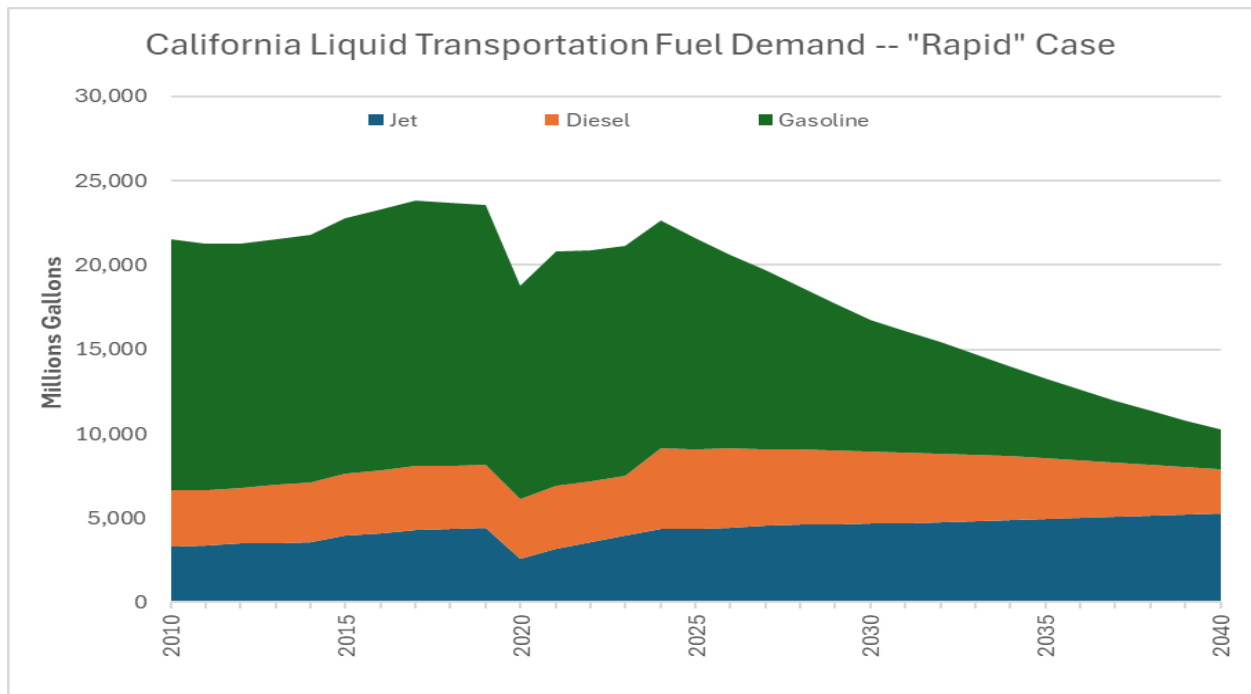
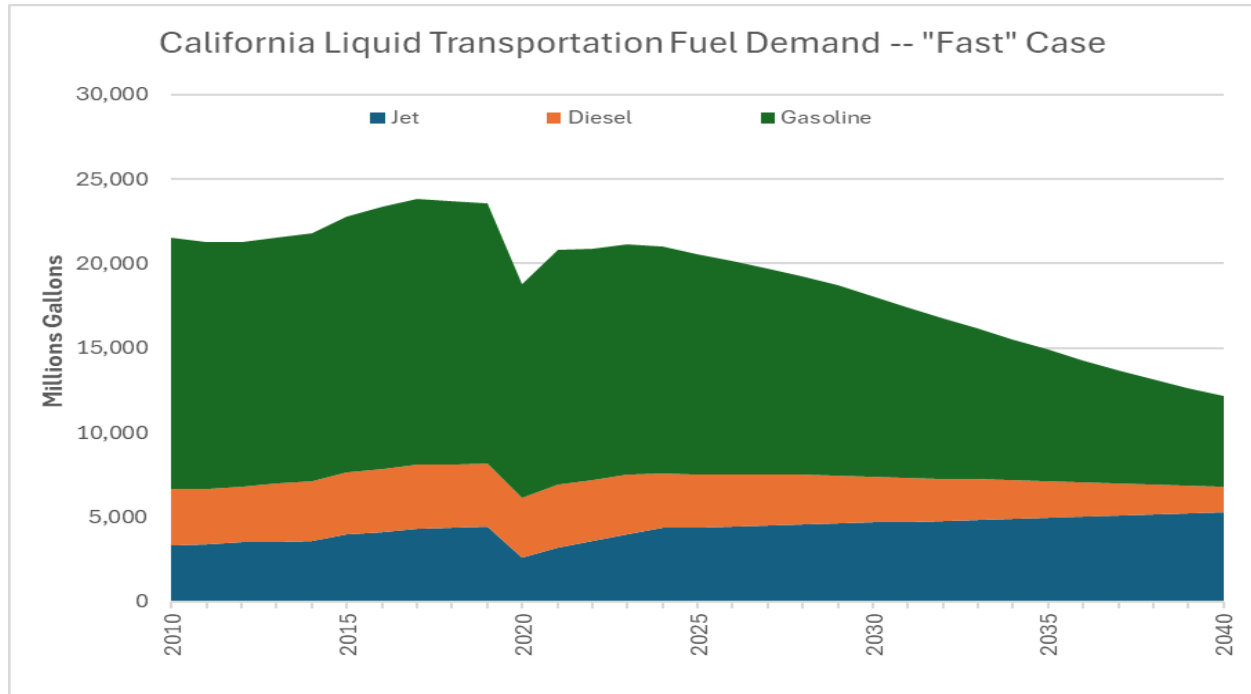


Figure 3 - "Rapid" = 2022 CARB Scoping Plan

The Draft is explicitly meant to underpin the CEC's and CARB's obligation under SB X1-2 to formulate a Transportation Fuels Transition Plan encompassing California's full range of transportation fuels and potential future demand scenarios for each. However, this Draft presents

just one preferred scenario (i.e., varying degrees of sustained declining gasoline demand) rather than evaluating other possible scenarios. The scenario in this Draft implicitly assumes that everything works as planned in terms of policy implementation and required investments. That is not a proper transportation fuels assessment that leaves the State agencies prepared to develop a robust transition plan and strategy for the transportation sector.

An assessment evaluating the status of the value chain of all transportation fuels as described above (and required by statute) would provide the State agencies with a range of fuel scenarios, which would enable them to develop a more robust transition plan. There are several potential demand pathways the various fuel supply chains could follow in the future, and not all of them involve perfect implementation of the State's current policies. One cannot simply assume that gasoline demand will fall off precipitously (as do the three scenarios above), nor that the gasoline (or for that matter, diesel or jet fuel) supply chain will smoothly adapt to the CEC and CARB's predicted declining market. ***A more robust assessment would explore several "failure points" (e.g., meeting a significant reduction in Vehicle Miles Traveled) or places in the system that are lacking resilience (e.g., port infrastructure or electric grid build-out), and would model scenarios that take into account those potential failures.*** The only vulnerabilities that are explored in this Draft are those related to the spot market and the vaguely defined potential for "manipulation", with several other key vulnerable elements left unexplored.

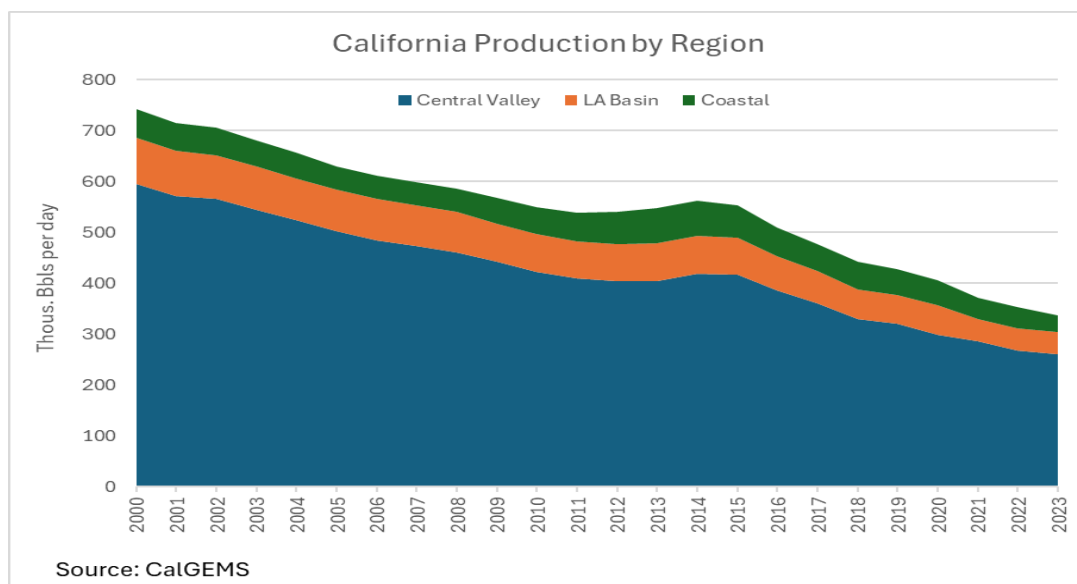
What is missing from the current Draft?

Crude Oil Production in California

SB X1-2 requires the first assessment to analyze the upstream (i.e., oil and gas extraction) and refining segments of the petroleum industry.⁷ California has historically produced a substantial portion of the total amount of crude oil that is locally processed and refined in the State, predominantly for consumption in California, but also to meet supply obligations in other states and markets.

⁷ PRC § 25371(a)(2)

Figure 4 - Crude Oil Produced in California by Region



California crude oil production has declined at an average annual rate of 3.4% since 2000. The decline rate has been accelerating and was close to 14% in the second half of 2023. The decline in California domestic crude oil production has more to do with difficulties in obtaining permits to drill than lack of oil reserves. As of December 2022, California held almost 1.5 billion barrels of proved and probable crude oil reserves, which ranked it sixth among the 50 states.⁸ The observable decline in production is not due to resource availability or the “natural decline” in production often cited in State reports. The actual decline in domestic oil production is due to highly constraining policies and a permitting environment with increasing barriers to oil and gas production. This is a more aggressive decline rate than was modeled in CARB’s 2022 Scoping Plan Update.⁹ Constraints on domestic production have put substantial pressure on other parts of the system, including pipelines that transport crude oil to key refining locations in the State.

Producers and Permitting

WSPA does not see any evidence in the Draft that information about production conditions or constraints was sought from domestic producers of California’s crude oil. This is worrisome given that SB X1-2 explicitly requires the State agencies to “consult with the state’s fuel producers and refiners”¹⁰ in preparing the Transportation Fuels Transition Plan, for which this Assessment is an

⁸ <https://www.statista.com/statistics/790790/us-oil-reserves-by-state/>.

⁹ CARB 2022. 2022 Scoping Plan Update. pp. 101-5. While the 2022 Scoping Plan Update does not specifically “model” future declines in oil production, it assumes that production will decline at an average annual rate of approximately 2%, based on a UC Santa Barbara study commissioned by the State (<https://zenodo.org/records/4707966>). The 2022 Scoping Plan Update also notes that shifting domestic production volumes to marine imports may also have GHG leakage effects, and “could require more infrastructure to store and move larger volumes of crude oil to the refineries in state” (p. 104).

¹⁰ SB X1-2, Section 25371.3.

essential foundation. Had the CEC and CARB sufficiently explored these key upstream parts of the fuel supply chain, they would have discovered what the industry knows quite well: California geographically has some of the largest and most accessible oil reserves in the world. California producers simply are not permitted to get to them due to State impediments.

It is well understood on the production side of the industry that development of reserves requires a program of continuous evaluation, investment, and development. It is almost never the case that a substantial reserve is developed in one phase and depleted through the first initial tranche of investment. Permits for drilling, whether for exploration or production, are an essential requirement of a properly functioning production sector. However, in the California case, new permits for drilling have been severely curtailed and many producers have been forced in the short term to rely on existing investments to be economically viable. This is only a short-term adaptive solution; extended denial of access to the resource means that operators must make hard decisions about the economic viability of their production enterprises.

Therefore, lack of new drilling permits is forcing producers to rely predominantly on existing permitted facilities to maintain production. To date, as of May 2024, the primary permitting agency responsible for production-oriented permitting, CalGEM, has approved only about 300 production-related permits.¹¹ Compared to “normal” periods of business, this level of performance is less than 20% of what producers in California have long recognized is needed to meet the requirements of a properly functioning permitting process required for production operations to in turn meet demand for crude oil in the state. A proper fuels assessment would go as far upstream as necessary to assess the availability of crude oil assets and the cost constraints on acquisition of the 1.4 million barrels per day required to supply the State’s refinery processing demands.

¹¹ CalGEM approves more than 18 different types of permits for subsurface activities, including injection wells, monitoring wells, testing wells, and other wells related to the overall operations of a producer. However, only five types directly relate to production of crude oil: new drills, reworks, sidetracks, well stimulation (fracking), and deepening. These five permit types have been stalled out at CalGEM since the Newsom administration began giving direction to CalGEM in 2019 to limit or halt the approval of permits for all manner of production activities, including well stimulation and high-pressure cycling steaming. Not only has permit approval declined precipitously, but the average time between submission and approval has increased over seven-fold in the five years since 2019. (Source: WSPA analysis submitted to CalGEM through various regulatory processes).

Figure 5 - CalGEM Oil and Gas Permits 2011-2024¹²

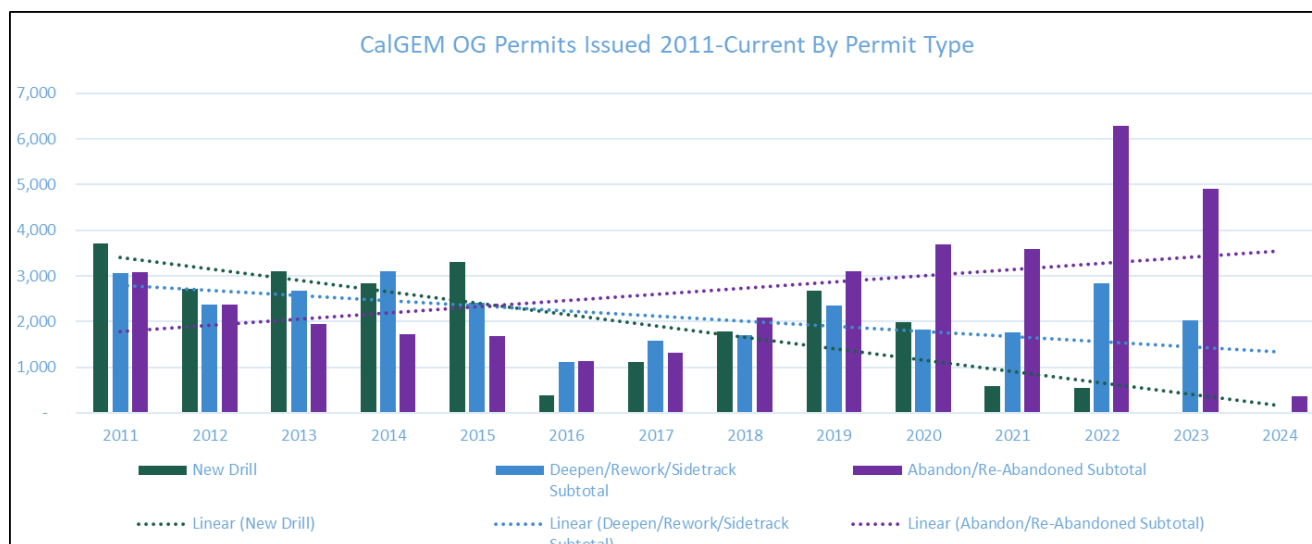
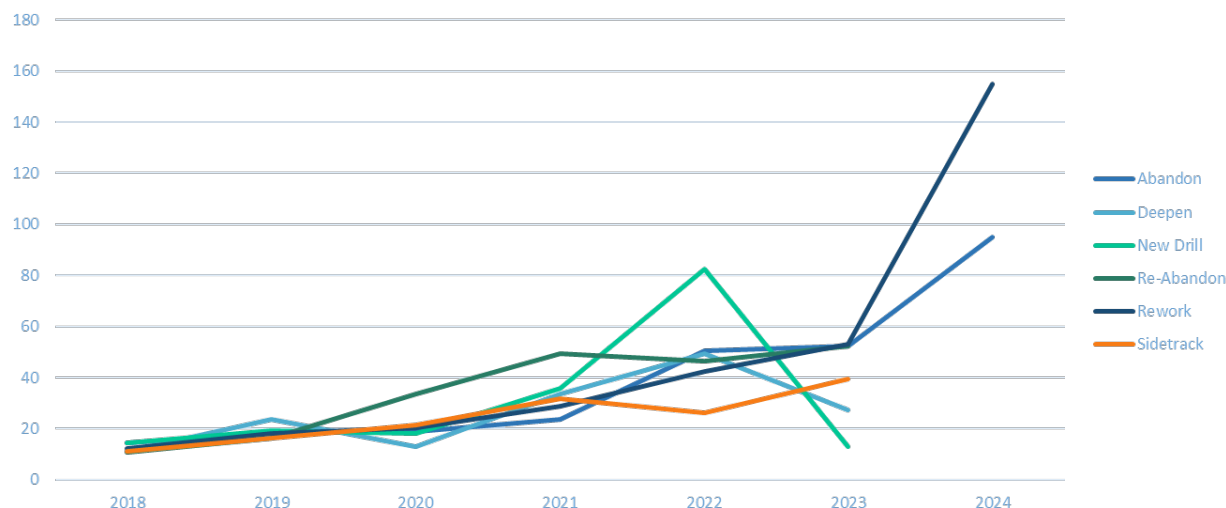


Figure 5 shows the decline in production-related permits approved since 2011. Historically, the agency has approved an average of 8,000-10,000 permits each year. Since 2019, the number of production-related permits has dropped to insignificance. The shift from production-related permitting to plugging and abandonment permits is dramatic, beginning with the upturn in global oil prices in 2017-18 and the increasingly politicized focus on shutting down and shutting-in production in California.

As a further impediment, the time that CalGEM takes to approve a production-related permit has expanded by over seven times in a mere five years, from an average of about 12 days to more than 185 days (see Figure 6, below). These are conditions that severely impact production in the state and explain a great deal of the decline in crude oil volume produced domestically.

¹² CalGEM WellSTAR data; Catalyst Environmental Solutions analysis, *unpub. reports*.

Figure 6 - Time to permit approval of oil and gas permits at CalGEM



Crude Oil Pipeline Capacities

As the Draft notes, “Kinder Morgan operates the only common carrier pipeline network within California.”¹³ However, the Draft only discusses the pipelines carrying refined product. Crude oil pipelines are a major component of California’s domestic refining supply and are not even mentioned in the Draft.

Pipeline entities play a key role in the supply chain that is critical to moving crude oil from domestic sources to the two regions (Los Angeles basin and San Francisco Bay Area) where domestic crude oil supply is essential to refinery performance. Were the CEC and/or CARB to have consulted the operators of these pipelines, they would have learned that this part of the supply chain is running at critically low volumes.

Figure 7 shows the alignment of several critical pipelines for crude oil and indicates their current design capacities. These design capacities were engineered with long-term production in view and took into account the reserves and likely future demand for transportation from oil fields to refineries dating from the 1980s onward.¹⁴

¹³ Draft, P. 31

¹⁴ Sources: Analysis of key company and government public websites. Turner Mason & Company, *unpub. analysis*.

Figure 7 - Location, alignment and carrying capacity of key crude oil pipeline infrastructure



Each crude oil producing area is connected to a given refining center by multiple pipelines of various diameters (capacities). While this can be good for redundancy, in the event of an interruption, it also creates challenges in keeping the system operational as local oil production continues to decline. A pipeline must maintain some minimum volume so the crude oil will continue to move. This minimum throughput volume is a function of the pipeline’s design (e.g., diameter, length), operating conditions (e.g., pressure, temperature), geography (e.g., elevation changes), the age of the pipeline, the regulatory environment, and the characteristics of the crude oil itself

(e.g., gravity, viscosity). The vast majority of crude oil produced in California, and in the San Joaquin Valley in particular, is heavy oil (high specific gravity) and therefore requires lift and heating specifications to move the crude oil over long distances.

It is critical to understand that California's crude oil pipeline infrastructure was designed to support decades of growing demand, both in California and the other western states. They are also key elements of the national security infrastructure on the west coast, supporting strategic U.S. interests in the Pacific.

Marine Terminal Throughput Capacity

The Draft, and indeed much of the California policy direction on fuel supplies, appears to assume that reductions in domestic crude oil production can be easily compensated for by increasing imports of both crude oil and refined products. ***However, the Draft fails to adequately address the actual throughput capacity of the marine terminals that are assumed to be required by this substantial increase in imports, and also fails to address regulatory constraints that CARB has imposed on tanker vessel calls at California ports starting in 2025.*** We further elaborate on some of the impacts of the Ocean-Going At-Berth Regulation (At-Berth Regulation) in greater detail below.

Further, an adequate assessment of the realities of refining crude oil in the State, along with a proper assessment of the displacement of Ultra-Low Sulfur Diesel (ULSD) with Renewable Diesel (RD), would clearly show that the same marine terminals that the CEC and CARB assume will accommodate transfers of millions of barrels of refined fuel will already be busy hosting ever-increasing volumes of imported crude oil from foreign countries.

This Draft does not present a realistic assessment of these factors, nor does it examine the critical pinch point in the system that marine terminals represent, which could have major impacts on supplies and prices. The CEC and CARB must assess marine terminal constraints if they are to determine if or how additional refined fuel volume flows will be accommodated by existing marine terminals. There are four incremental marine terminal throughput flows that should be properly analyzed, critically including a sharp eye toward impacts of constraining policies such as the At-Berth Regulation:

1. Additional crude oil receipts to compensate for the continued and accelerated decline of in-state oil production.
2. ULSD export volume increases as a consequence of increasing RD use in California. This also includes RD movements from Northern CA and other domestic and international renewable fuels facilities into Southern CA (i.e., the Ports of Los Angeles and Long Beach).
3. Growth in biorefinery feedstock receipts to supply renewable diesel and sustainable aviation production facilities – other than rail imports that supply biofuel feedstocks directly to those biorefineries.
4. Changes in product flows associated with the likely closure of a refinery – such as the need to import gasoline and other refined products to maintain contractual supply obligations if a refiner elects to transition the facility to a fuel terminal.

Other Marine Logistical Constraints

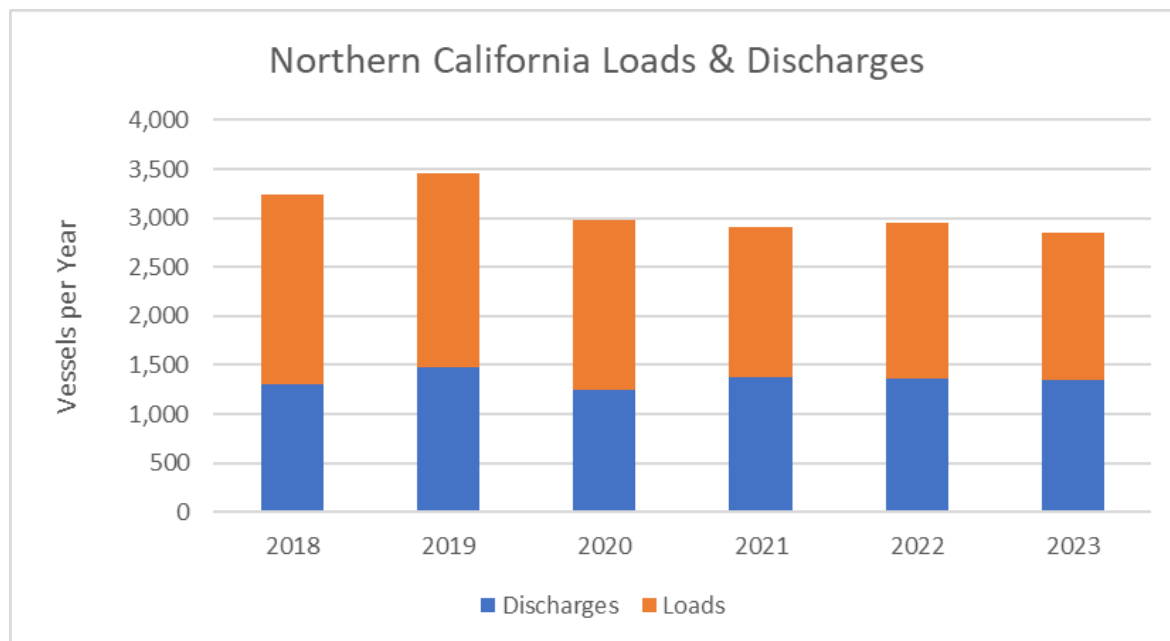
Vessel Traffic

The State Lands Commission (SLC) collects data on vessel movements (both barge and ship) for each marine facility in California. The CEC and CARB can analyze these data to assess how trends in California crude oil production and transportation fuel demand are impacting ship traffic.¹⁵ Under its recently adopted emergency regulation,¹⁶ the CEC will now be collecting this data as well. For example, Figure 8 below shows total vessel movements for loads (outbound) or discharges (inbound) cargoes in the North (greater San Francisco Bay Area).

A vessel “load” occurs when petroleum products are transferred from onshore storage tanks to compartments aboard the product tanker or barge. Some of these transfers can include multiple types of refined products or feedstocks segregated by compartments. Loaded vessels will then depart a marine terminal as an export (to foreign destinations or the Pacific Northwest) or intrastate movement to another California terminal.

A vessel “discharge” occurs when a petroleum product or refinery feedstock is transferred from the marine vessel to onshore tankage. The vessel’s cargo may have originated from outside the state, another California marine terminal, or in some cases from a ship-to-ship transfer. Details are contained in the SLC datasets (e.g., if the vessel is a barge or ship and whether the ship is an international or Jones Act tanker). Since 2018, there has been a decline in the number of loads, but the number of discharges has remained fairly constant.

Figure 8 - Northern California Loads and Discharges (Vessels per Year)



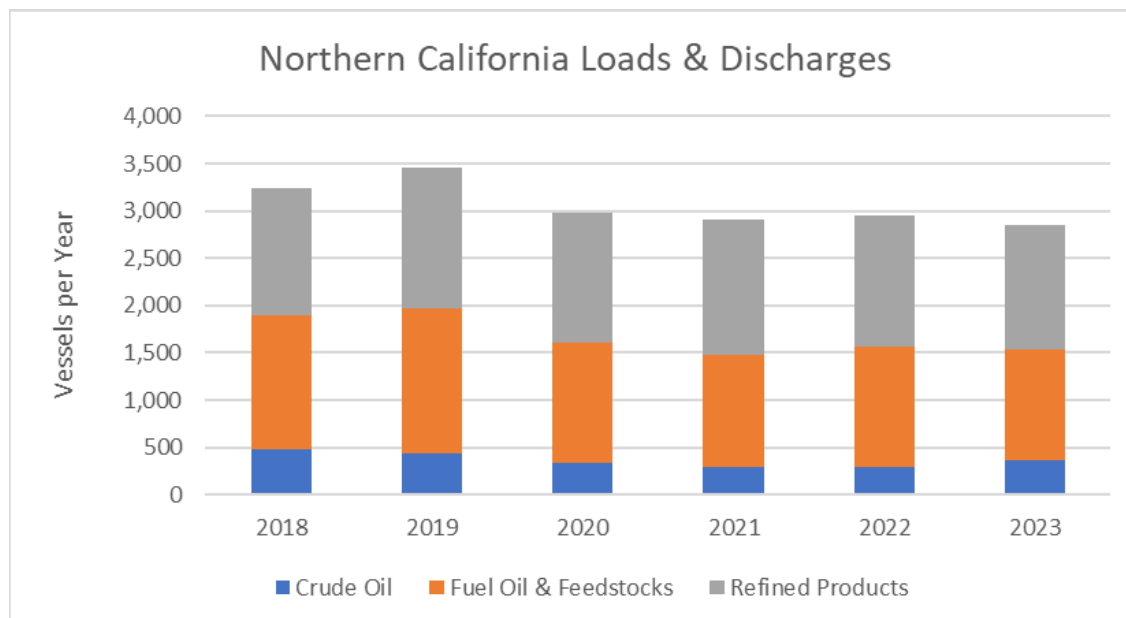
These data can also show what materials are moving across the docks. Figure 9 shows vessel movements in the North (i.e., San Francisco Bay Area) for crude oil, fuel oil and feedstocks, and refined products that consist of traditional transportation fuels (gasoline, diesel, and jet fuel) and

¹⁵ California State Lands Commission and Turner Mason & Company analysis, 2024.

¹⁶ Docket No. 23-OIR-03 under Resolution No. 24-0508-07, “General Rulemaking Proceeding for Developing Regulations, Guidelines, and Policies for Implementing SB X1-2 and SB 1322.”

renewable fuels (renewable diesel and sustainable aviation fuel).

Figure 9 - Northern California Loads and Discharges – Crudes, Fuels and Oil Feedstocks, & Refined Products



Most of the recent decline in loadings seen in Figure 8 has been fuel oil ships seen in Figure 9. What these data do not show are potential constraints to the marine logistics system. Those constraints can come in two forms: available dock space and regulatory constraints of the At-Berth Regulation, both of which we discuss below.

Dock space

Refineries have limited berths (some have only one) and can be limited by the length of the ship or its draft.¹⁷ The growth in containerized freight imports in the Ports of Los Angeles and Long Beach impacts the traffic patterns within the port and creates constraints on tanker movements within the port. All of these factors make the scheduling of ship traffic critical and increasingly more difficult as vessel traffic grows. The CEC and CARB should analyze the capacity for energy-related vessel traffic in ports in both the North and South in order to fully test its hypothesis that more vessels and port capacity can be made available to replace California’s domestically produced crude oil.

- Regulations limiting the number of vessel calls and ships at dock.
- Another limitation to vessel traffic is whether the tanker originated from a domestic port, which requires it to be a Jones Act-flagged tanker. There are only 55 of these U.S.-flagged vessels and eight of them are dedicated to moving renewable diesel from the Gulf Coast to California.¹⁸ The market for Jones Act ships is extremely tight, especially for spot charters.¹⁹ Spot charter availability is critical to the CEC’s transportation fuels assessment because it is the charter class used if ships need to be quickly contracted in the event of a

¹⁷ Draft is the distance from the waterline to the bottom or keel of the ship.

¹⁸ [Survey: Jones Act rates get renewable diesel boost | Latest Market News \(argusmedia.com\)](https://www.argusmedia.com/news/2023/05/16/survey-jones-act-rates-get-renewable-diesel-boost)

¹⁹ A “spot charter” is a shipping industry term for one-off or short term duration shipping contracts. See, for example, <https://www.scorpiotankers.com/glossary/spot-charter/>. Last Accessed: May 16, 2024.

supply outage in California.

At-Berth Regulation

CARB's At-Berth Regulation will impose new requirements on marine terminal operations. It requires operators to reduce emissions from crude oil and product tankers by capturing stack emissions or by electrification of the marine vessel discharge operations by the use of shore-based power. Absent the ability to implement one of these options, most California tankers will be severely limited in the number of visits they will be legally permitted to make to California ports and marine terminals. At this time, the vast majority of the California tanker fleet, and the California ports and terminals that serve them, are not equipped to utilize shore power. Moreover, no stack emissions capture system has yet been developed, tested, or approved for use by tankers, and vendors will not be ready to provide such a system for many years to come.

WSPA submitted comments to the CEC on 4/25/2024 indicating our concerns about the impacts of implementing the new At-Berth regulations.²⁰ In that letter, we indicated that "CEC should take note that the California Air Resources Board's (CARB) recent amendments to the Ocean-Going Vessels At-Berth Regulation (At-Berth Regulation) will serve to further constrain refined products, renewable fuels, and crude oil supply into California. By requiring petroleum tankers to use emissions capture or shore power technology not yet developed, tested, or implemented on the vast majority of California's tanker fleet or tanker terminals, CARB's At-Berth Regulation will force many tankers to reduce visits to California ports starting in 2025 to meet the At-Berth Regulation's requirements. This is another example of a State policy that will further restrict the availability of gasoline in the State of California and will limit the State's ability to mitigate in-state shortages of gasoline supply with marine imports. And it is another policy that will likely hurt California consumers rather than helping them."

Given these concerns, we would urge the CEC and CARB to consider the following issues as the agencies seek to harmonize any future policy proposals with existing regulations that are already in place and will have near-future impacts that may conflict or exacerbate new or proposed policies.

- Marine terminal operators (refiners and port authorities) are unable to provide an accurate critical-path compliance schedule for the At-Berth Regulation, due to the inadequate number of commercially viable vendors of barge-mounted emission capture technologies that could be potentially modified and approved for use for the California tanker fleet.
- Similarly, shore power is unavailable for the vast majority of the California tanker fleet, as most tankers, ports, and terminals do not have appropriate shore power infrastructure for tanker use. Even if that hurdle could be overcome, the State grid currently lacks the electrical generation, transmission, and distribution capacity to electrify all vessels and terminals covered by the At-Berth Regulation.
- These realities put at risk the obligated parties' ability to comply with the At-Berth Regulation's deadline of January 1, 2025 for vessels visiting the Ports of Los Angeles and

²⁰ <https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessels-berth-regulation>; WSPA comments may be found at <https://content.govdelivery.com/accounts/CNRA/bulletins/398c8a0>, Docket 23-OIIP-01, Western States Petroleum Association Comments - WSPA Comments on April 11 SB X1-2 Margin Cap and Penalty

Long Beach, and further unlikely to be able to meet the January 1, 2027 compliance deadline for vessels visiting any other California marine terminal.

- Absent an extension of the current compliance deadline schedule, there is a risk that some marine terminal operators will have to significantly reduce the number of product tanker port calls to reach the exemption level of 20 per year until the required control technology is developed and implemented.
- This complex of challenges will create yet another constraint on refineries' marine throughput capacity for crude oil and products.

A Potentially Critical Scenario

According to CalGEM, California's domestic crude oil production averaged 338 Thousand Barrels per Day (TBD) in 2023. The U.S. Energy Information Administration (EIA) estimates that production fell to 293 TBD by February 2024. Meanwhile, California refiners processed an average of about 1,430 TBD of crude oil during 2023. Thus, in-state production in 2023 accounted for 25 percent of California's total crude oil feedstock needs.²¹ However, the recent continued decline for the month of February 2024 means that in-state oil production represented approximately 20% of California's total refining needs. California in-state oil production has been declining at an overall average annual rate of about 10% since 2015, but it is important to note that this rate of decline has been *accelerating*. Measured over the last *four* years, the average annual drop in production has been about 14%. No matter how the rate of decline is measured, it is still far steeper than any of the CEC or CARB planning and strategy documents project. For example, as mentioned above, the 2022 CARB Scoping Plan Update projects that annual California domestic oil production will decline at a gradual rate of approximately 2% per year, consistent with their demand projections. Clearly, reality has gone beyond the modeling and must be accounted for.

This higher-than-predicted rate of decline in California oil production is challenging some pipelines to maintain minimum flow rates. As mentioned earlier, pipelines must maintain some minimum throughput to remain commercially and operationally viable. When a pipeline is forced to close, the production it carried must find another pipeline, or another mode of transportation, such as rail or truck. The alternative is to cease production altogether in the oil fields that require pipelines to move crude oil to refineries. The Central Valley has multiple pipelines running north and south. While each corridor has a number of trunk pipeline options and destinations, declining production makes it difficult to keep all lines at minimum throughput. The risk of closure could be higher for northbound lines leaving the Central Valley because these pipelines tend to have larger capacity and must negotiate undulating terrain, with intermittent pump stations to boost flow.

The decline in California crude oil production is a challenge for California refiners as well. California crude oil has fallen to 25% of refinery crude oil supply, down from 50% in 2000, and 62% in the 1980s. In the future, if a pipeline shuts down and a refinery cannot find an alternative pipeline for California crude oil, it must source crude oil by another means, such as rail or ship. No California refineries have crude oil unit train²² transfer facilities, so they must rely on marine infrastructure to replace diminishing availability of California crude oil. Replacing California crude oil with waterborne sources increases vessel traffic, ship channel congestion, and emissions – and

²¹ <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPCA2&f=M>

²² A unit train for crude oil consists of about 100 cars containing about 70k barrels of crude oil.

presents regulatory challenges, as discussed above.

Some refineries have limited access to marine facilities. If a refinery has only one berth, the refinery must choose between bringing in crude oil, refined product blendstocks, or finished products. They must also consider potentially exporting other products. For example, a refiner may need to increase waterborne crude oil imports and exports of fossil-based diesel (displaced by renewable diesel) and would face increasingly constrained marine terminal throughput with limited dock capacity. A refinery in such a scenario would be faced with serious decisions about whether to remain in business in California.

Depending on the size of the dock, onshore tank capacity, and pumping rates, it can take two to three days to unload a ship. Some refiners could only receive or load 10 to 15 vessels per month for all crude oil and refined product volumes. Based on an average refinery and average crude oil tanker delivering to California, this would not be enough crude oil to keep the refinery viable.

If a refinery were to convert to a product terminal, it would increase vessel traffic by 3 to 5 times to supply the market with same volume of product because clean product tankers are much smaller than typical crude oil tankers. In other words, it takes more time, investment, and space to replace crude oil imports with refined products.

Policy Options Presented in the Draft

WSPA appreciates that the CEC and CARB are trying to be as creative as possible in presenting policy options to mitigate fuel supply shortages. However, we believe that only some of the policy options presented in the Draft warrant serious further consideration, analysis, and development. WSPA also believes that each of the viable policy options not only deserves to be developed in detail, but that the CEC and CARB need to invest heavily in both public input and qualified industry expertise in order to vet them thoroughly and explore the potential unintended consequences on the fuel supply, as well as other potential effects of these policies on other sectors of the economy, and on California's consumers.

WSPA is aware that the CEC and CARB engaged other industry experts in developing the Draft. WSPA has also worked extensively with many of those experts and their organizations in the past, and we are fully aware of their capabilities. We do not believe that the current version of the Draft reflects the full suite of the capabilities of those experts, whose known expertise spans the entirety of the supply chain, from production to logistics, to refining, and to marketing and distribution.

For this reason, WSPA has engaged the expertise of Turner Mason & Company (TM&C) to perform detailed analyses of several elements of the supply chain. Seeing that the Draft clearly did not present analyses of the full range of transportation fuel supply scenarios, as we have observed above, our work with TM&C has examined a number of areas of vulnerability and risk in the supply chain. WSPA would be pleased to have an opportunity to engage in a meaningful collaboration with the CEC and CARB to share our expertise, as well as the findings of our industry experts.

WSPA further encourages the CEC and CARB to workshop key options for subsectors of the supply chain, to more completely understand the dynamics, business models, and capacities of the supply chain in more detail than was demonstrated in the Draft. For example, should the CEC and CARB wish to examine the effects of marine terminal complexities and limitations on imports and exports more carefully, we would hope that the agencies would use their convening power and resources to engage port facility managers, shippers, vessel leasing experts, and dock-to-refinery system managers to learn from their perspectives.

We would also encourage the CEC to convene a public hearing asking CARB to explain why it has chosen to significantly restrict tanker visits to California ports and terminals at a time of great need for the state, rather than considering amendments to the At-Berth Regulation to allow those visits to occur until emissions control technology is developed and implemented throughout the tanker fleet. Further, should the agencies wish to more fully understand the factors that go into spot market trading decisions, perhaps the CEC would be willing to engage with actual traders to gain some knowledge about their decision-making processes.

While we appreciate that the CEC and CARB have described 12 potential policy pathways in brief form, with pros and cons, decisions of such gravity and consequence cannot be made based on a few mere paragraphs and tables. Other similarly significant changes in California's energy policies have involved multiple studies and extensive analyses by experts that have taken months, if not years, of meaningful deliberations and consultation to explore, develop and implement. We firmly believe that the Transportation Fuels Assessment and the Transportation Fuels Transition Study proposals envisioned by SB X1-2 warrant at least the same level of engagement, analysis, development, and vetting before significant and consequential decisions are taken by State policymakers that could hurt Californians more than help them. These are decisions that could easily put the entire fuel supply chain at risk, not only for the State of California, but for our two neighboring states of Nevada and Arizona, whose fuel supplies are firmly dependent on the viability of California's petroleum supply chain and most notably, California's refiners.²³

Finally, the CEC has the resources and authorities under the Petroleum Industry Information Reporting Act of 1980 (PIIRA) and SB X1-2 to learn from the industry through the request for and analysis of confidential business information. This is the kind of information that WSPA and other entities are not allowed to either know or share, due to important antitrust protections. However, given the level of understanding of the industry revealed through the Draft, WSPA would strongly encourage the CEC to meet with individual companies under PIIRA protection and ask key questions in order to learn whether many of the assumptions the CEC and CARB have apparently based their Draft on have any substance or reality. For example, the presumption (perhaps based on an economic theory) that refiners have much more excess capacity, either in utilization percentages or storage, should be tested with each company rather than simply asserted as a public conclusion without sufficient evidence. Or, as another example, that the CEC appears to assume that refiners can be compelled to increase reserve capacities in order to mitigate supply shortages during planned and unplanned outages of refinery operations. However, without actual knowledge or evidence, or an analysis of the time or logistical steps this would require (including local permitting), this assumption cannot be tested as a viable policy option.

In the following sections, we comment on the policy options presented in the Draft that we believe warrant further development. WSPA believes that the policy options we are choosing not to comment on simply do not have any realistic place in the array of policy choices the agencies have before them, nor do they warrant serious further consideration or staff time. We suggest that these ideas be moved to an appendix in the final version of the Assessment to document that they were considered. However, we do not believe they warrant further time, energy, or resources from state agencies.

²³ According to the CEC, California's refineries provide most of Nevada's and nearly half of Arizona's transportation fuels. <https://www.energy.ca.gov/data-reports/energy-insights/what-drives-californias-gasoline-prices>. Last accessed: May 16, 2024.

Cost of Service (COS) Policy Option

We are addressing the COS model only because it has received so much attention by public members at CEC workshops and during recent State Legislature oversight hearings. We have very serious concerns about the viability of this model as it could be applied to a global multi-commodity market, such as petroleum, which is not a natural monopoly and has not traditionally been regulated in the United States as a utility.

A utility-based COS model for electricity and natural gas distribution is a regulatory oversight and control structure intended to address natural monopolies that provide a single type of energy commodity to customers in a specific geographic marketplace. Price controls and cost recovery for operating expenses and capital improvements at a profitable return-on-investment are primary elements of a utility model.

Such an approach does not easily lend itself to the transportation fuels market, which is neither a natural monopoly nor a single energy commodity. Exactly how a cost-of-service model could be applied to California refiners' operations and the other transportation fuel value chain segments (i.e., upstream producers and pipelines, storage providers, marine infrastructure, downstream distribution infrastructure, wholesalers, and retailers) has not been explained in the Draft. More concerning, the Draft does not discuss the potential benefits to consumers of a COS model, nor does it address the potentially deleterious unintended consequences associated with an inadequate fuel supply in that model. If the State were to continue to pursue such a policy option, we would strongly urge the agencies to develop a report that, at minimum, addresses the following critical questions:

- How would the California Public Utilities Commission (CPUC) regulate the prices of all output from refiners ranging from liquified petroleum gases (butane and propane), to refined products (gasoline, diesel, jet fuels), to other products (residual fuels, fuel oils, lubricants, asphalt, plastics, and petroleum coke)?
- If this policy were only intended to be applied to gasoline sold in California, how would a cost-of-service model be applied to only a single commodity for firms producing scores of other petroleum-based commodities? How would cost recovery be apportioned just to California gasoline output?
- How would the CPUC regulate all, some, or none of the domestic and international refinery feedstocks such as crude oil and gas oils?
- How would the CPUC regulate the other costs incurred by the refiners for operating expenses and necessary capital investments for planned refinery maintenance, unplanned outages, and compliance with myriad local state and federal regulations involving fuel regulations and emission limits?
- How would the CPUC regulate the cost of marine logistical services associated with imports, export, and intrastate movements of refinery feedstocks, refined products, and renewable fuels? We would ask the same question about truck transport services.
- If other refined products and refinery feedstock prices are regulated, how would the CPUC compel foreign suppliers to sell to California refiners at set price levels? Would the Federal Energy Regulatory Commission (FERC) or the U.S. State Department have authority to set these prices? Would the State cover the incremental costs refiners incur above the set values for imported crude oil, other refinery feedstocks, and refined products?
- How often, under what circumstances, and by what adjudicated process would the CPUC revise commodity prices?

- How would other prices be controlled downstream of the refiners by the CPUC to ensure that other market participants such as wholesalers and retailers would not take advantage of set price levels by increasing their margins to end-use customers? Does that mean the CPUC would set prices at all distribution terminal racks, and the 10,000-plus retail station outlets?
- How would the CPUC's role at the State level interface with the Commodity Futures Trading Commission (CFTC) role at the Federal level?
- How would a COS model for the California fuel supply chain affect contractual obligations that refiners currently have with other states, such as Arizona and Nevada? Does this require addressing legal issues, such as the commerce clause or other federal preemption questions?
- How does a COS model avoid or mitigate a loss of supply due to an unplanned outage?

Policy Options WSPA Recommends for More Complete Treatment

Recognizing that the CEC and CARB have already acknowledged California's structural fuel supply barriers as a key element in contributing to price spikes, WSPA recommends that the agencies invest additional energy and resources into any of the policy options that have the potential to increase inventory and stabilize in-state fuel supplies. We would discourage the agencies from spending further resources on the other policy options, as further development would only increase risk and potentially exacerbate the current policy impacts that are constraining local fuel supply. If the agencies feel obligated to keep all options open in their final Transportation Fuels Assessment, we recommend placing the remaining options in appendices that demonstrate that the agencies creatively considered even the most implausible options.

We do not discuss the demand-oriented policy options presented in the Draft because we feel that these kinds of programs are already under sufficiently robust development through CARB and the CEC, and reflect the State's other policies designed to reduce consumer demand. We only note, as mentioned above, that predictions or forecasts about future fuel demand in California must account for and compare scenarios beyond the State's preferred declining gasoline demand scenario. We further urge the agencies to avoid unrealistic expectations that lower income Californians will somehow be able or willing to transition to more expensive electric vehicles on the schedule the State prefers, rather than the schedule these consumers are able to accommodate financially.

The Draft offered brief descriptions of three inventory-related policy concepts that merit additional analysis and public discussion: a Strategic Fuels Reserve, Minimum Inventory Levels, and E15 Blending. We address each of these briefly below.

Strategic Fuel Reserve

The CEC previously studied the concept of creating a Strategic Fuels Reserve (SFR) in 2000 and 2001, at the direction of Assembly Bill 2076.²⁴ The purpose of the SFR concept was to reduce the magnitude and duration of fuel price spikes in California. Given the analogous situation cited in SB

²⁴ Assembly Bill No. 2076, Shelley, Chapter 936, Statutes of 2000, State of California, approved by the Governor September 29, 2000. Link: http://www.leginfo.ca.gov/pub/99-00/bill/asm/ab_2051-2100/ab_2076_bill_20000930_chaptered.pdf

X1-2, and the mandate to the CEC to explore all options, we recommend the agencies direct due attention to the work previously done.

During that process in 2000, the CEC assessed the concept of a strategic fuels reserve using a combination of consultant and internal technical staff resources. A revised consultant report was published in July 2002.²⁵ Over the following year, the CEC held workshops and conducted a hearing that concluded that "...the Governor and Legislature should not proceed with the strategic fuel reserve concept evaluated by the Commission. The Commission found that a strategic fuel reserve could have several unintended consequences, which could limit its effectiveness as a tool to moderate gasoline price spikes and could reduce the total supply of gasoline in the state. In addition, the Commission has determined that investment in private storage capacity is increasing, which reduces the need for SFR public storage."²⁶

The transportation fuels supply chain has continued to evolve since that initial assessment of an SFR concept, which merits a re-examination of this potential strategy to:

- Quantify the State's inventory capacity at both refinery locations and third-party facilities.
- Identify changes in storage capacity and types (leased versus community storage).
- Determine throughput limitations for marine terminals that could be used as part of the initial filling and subsequent restocking of the SFR.
- Reassess parameters of the original SFR concept to identify potential operational barriers or limitations to address price spikes, as well as potential negative consequences on private sector inventory holdings.

Minimum Inventory Levels

The other inventory-related policy concept identified in the Draft was related to a requirement for refiners to prevent their gasoline and component inventories from dropping below some yet-to-be-determined level, except under certain conditions. WSPA is concerned that such a concept could have unintended consequences for refinery operations, and constrain refiners' flexibility to meet changing market or operational conditions. If the CEC and CARB intend to pursue this course, we would urge the agencies to develop a report that would provide detailed responses to several critical questions about this concept, such as:

- How would the minimum inventory level be set?
- Would there be a different level for each refinery location?
- How would minimum inventories be managed through seasonal RVP transitions where inventory must be taken to minimum levels for tank turnover?

²⁵ California Strategic Fuels Reserve, Revised Contractor Report, California Energy Commission, P600-02-017D, July 2002. Link: <https://stillwaterassociates.com/wp-content/uploads/2023/03/Strategic-Fuel-Reserve-Study-Stillwater-Associates-7.3.02.pdf>

²⁶ Feasibility of a Strategic Fuels Reserve, Commission Report, California Energy Commission, P600-03-013CR, July 2003, page 2. Link: https://web.archive.org/web/20100607193136/https://www.energy.ca.gov/reports/2003-07-31_600-03-013.PDF

- Would minimum inventory levels be extended to include third-party terminals?
- Does setting a minimum inventory level include increasing total storage capacity in the state for gasoline and blending components? How does the State anticipate incentivizing investment and potentially sharing risk?
- What are the feasibility studies and permit timelines for constructing additional storage capacity at refineries?
- If no additional storage tanks are constructed as part of this concept, do minimum inventory level requirements constrain refinery operational flexibility by effectively increasing storage tank “heels” and reducing “working storage capacity?”
- The CEC should better understand product allocations, which are essentially minimum inventory levels set to conserve supply, for example, during hurricane events in the Gulf Coast region.

E15 Blending

The CEC noted E15 as a production enhancement strategy to allow increase blending of ethanol from 10% (E10) to 15% (E15) to augment existing CARBOB supply. WSPA believes that such a change should not be mandated because it can be invoked during times of tight supply. Existing infrastructure for ethanol, and ship and rail offload capacity exist for short-term increased blend percentages. To allow for blending up to E15, CARB must update the Predictive Model that is used to certify CARBOB emissions. Under current modeling assumptions, E15 blends could potentially put the State Implementation Plan (SIP) at risk for being out of compliance.

Rail Supplies

The Draft listed a policy option concerning the capability to import transportation fuel by rail and transload to tanker trucks at various locations throughout the State. The CEC accurately characterized this potential policy as a strategy that could be deployed in response to a significant emergency, such as in the aftermath of a catastrophic earthquake. However, if the State were to develop such a capability, then transportation fuel market participants (refiners, importers, and large marketers) might take advantage of rail transloading infrastructure to bring in additional supplies of gasoline under certain market conditions. The agencies should conduct a detailed assessment that would include at minimum:

- Identification of existing rail transloading facilities for refined products, if any;
- Attributes required for a typical rail transloading site;
 - Rail siding;
 - Tanker truck access;
 - Transloading equipment;
 - Personnel;
 - Security;
 - Rail access agreements;
- Estimated range of investment required per site and rail transportation costs from specific domestic refining centers;
- Minimum number of locations and basis for making that determination;

- Timing for delivery from key points of domestic origin, compared to waterborne resupply; and
- Potential barriers to private sector operation related to rail car availability and availability out-of-state suppliers capable of producing CARB gasoline.

We also recommend that the agencies take care not to treat each of these options in isolation. Rather, once an assessment and analysis for each policy option has been completed, the agencies should examine whether market and fuel supply stability might be enhanced further by combining viable options into a more comprehensive suite of policy solutions.

Conclusion

WSPA appreciates the opportunity to comment on the Draft Transportation Fuels Assessment. We wish to reiterate that, while we believe this Draft is an important foundation to initiate serious public engagement, we firmly believe it is incomplete and not ready to become the basis of a comprehensive transportation fuels policy. Nor is it – in its current form – a sufficient foundation to underpin the Transportation Fuels Transition Plan mandated by SB X1-2.

Should the agencies wish to correct the deficiencies in the Draft that we have identified here, WSPA and its member companies are eagerly disposed to assist and collaborate in multiple venues to develop the information base and policy recommendations that one would expect any comprehensive strategic effort of this scope and gravity would require. WSPA has already invested heavily in analytical work on multiple subsectors of the entire fuel supply chain. We would be pleased to work with the agencies to share our information and analytical products. All of our analyses so far have been conducted using publicly available data (much of it published by the CEC and CARB themselves).

WSPA wishes to note that, throughout multiple hearings and workshops, CEC Commissioners have reiterated their commitment to full, good-faith engagement with industry to ensure the most comprehensive Transportation Fuels Assessment and Transportation Fuels Transition Study. This commitment, as we understand it, is not just to fulfill the Commission's specific obligations under SB X1-2. It is to ensure that the State and its citizens have reliable access to affordable, adequate, reliable, clean, and safe fuels from all sources for the energy needs of a thriving population and economy. We share that commitment, and we are ready and willing to work with the Air Resources Board and the Energy Commission to achieve those goals.

Sincerely,



Catherine Reheis-Boyd
President and CEO

CC: Liane Randolph, Chair, California Air Resources Board