A STUDY OF SB 237
TO STABILIZE
OIL PRODUCTION IN CALIFORNIA

October 31, 2025

Joseph B. Silvi
University of California, Berkeley

James W. Rector
University of California, Berkeley

Michael A. Mische
University of Southern California

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Data Sources and Methods

For this research effort, a series of critical questions were developed, and data related to addressing those critical questions were identified, obtained, organized, and analyzed. The research involved in this work is widely available and includes but is not limited to verifiable sources such the California Energy Commission, U.S. Energy Information Agency, Bloomberg, U.S. Department of Energy, SEC filings, International Energy Agency, Oil & Gas Journal, American Petroleum Institute, the California Department of Tax and Fee Administration, the U.S. EPA, California Air Resources Board, Statista, California Attorney General's Office, California Legislative Analyst's Office, U.S. Department of Interior, Bureau of Labor Statistics, California DMV, California Geologic Energy Management Division, and the U.S. Oil and Gas Association. Readers are strongly encouraged to avail themselves to the many sources and authorities footnoted herein.

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1.0 Executive Summary

The objective of this paper was to examine the potential implications of SB 237 in the broader context of California's refinery closures, oil and gasoline consumption, imports, pipeline capacities, product imports, and environmental impacts.

At one time, California was the leading producer of crude oil in the world, yet today, the Golden State is facing a potential gasoline supply crisis. Long-standing policies and an adverse political and regulatory attitude have resulted in a steady reduction in both California's in-state oil production and refinery capacity, leading to increased dependency on oil and, potentially, more gasoline from foreign sources, such as Iraq, Ecuador, Brazil, and, at times, Russia, Iran, and Venezuela. Already saddled with the highest regulatory costs and taxes in the nation, retail gasoline prices in California are over 50% higher than the U.S. average.[1] [2] With the imminent closure of two refineries and the loss of at least 20% of its in-state refinery capacity to produce gasoline, or around 6.5 million gallons a day, as well as the potential loss of California's largest inland pipeline which supplies crude oil to Northern California, California could be confronting double-digit gasoline price increases, and worse, gasoline shortages and lines at the pump.

In response to the growing potential crisis, Governor Newsom and the California Legislature reversed years of anti-oil policy and passed SB 237. In a stunning contradiction to the stated viewpoint that "increasing CA oil production will not change gasoline production capacity and may only marginally change production costs,"[3] SB 237 was enacted and signed by the Governor with the intent of allowing up to 2,000 new oil drilling permits annually within Kern County as the means to increase California's oil production and stabilize its pipeline and refining infrastructure. However, while this policy change is well-intentioned, it is likely not sufficient to stabilize the state's pipeline and refining infrastructure.

Moreover, while SB 237 attempts to address production and supply concerns, California's energy policy must also consider climate impacts, environmental protection, and social justice. Producing crude oil in-state must meet the most rigorous environmental standards in the world and is subject to emissions mitigation programs, reducing methane, volatile organic compounds (VOCs), and other pollutants compared with production in countries with weaker oversight. Local production can also help reduce toxic emissions from natural oil and gas seeps, which are a significant source of methane and air pollution in regions like the Los Angeles Basin and Santa Barbara Channel. By capturing and responsibly managing these emissions, California can improve air quality, protect community health, and limit environmental degradation. Conversely, relying on foreign crude transfers environmental and social impacts overseas and can increase global greenhouse gas emissions, pollution, and environmental destruction. By prioritizing responsible in-state production alongside careful regulatory oversight, California can strengthen energy security, reduce both local and global pollution, bolster its economy, and serve as a model for balancing economic, environmental, and social priorities.

[1] CA's regulatory costs, including taxes, are around $1.44 a gallon or about 30% of today's AAA price of gas of $4.655.
[2] https://gasprices.aaa.com/state-gas-price-averages/
[3] Brandon Richards, Deputy Director, Office of the Governor, State of California, May 7, 2025.

1.1 Findings

Using data from the California Energy Commission (CEC), the California Geologic Energy Management Division (CalGEM), the U.S. Energy Information Administration (EIA), California Department of Tax and Fee Administration (CDFTA) and other public and validated sources, the authors performed multiple analyses and built several complex models. Our findings indicate:

1. California requires around 578,000,000 to 581,000,000 barrels of crude oil-derived transportation fuels and products (such as road asphalt) annually to support its economy and to partially supply neighboring states with said fuels and products.

2. California's consumption of crude oil and gasoline has declined moderately but not significantly over the 2001 to 2024 period. The annual rate of decline has averaged less than one percent, and consumption has increased by nearly 7% since the all-time low in 2021 during the pandemic. The 2001 to 2024 decline trend is consistent with the observations of Stillwater Associates.

3. There is no indication that the consumption of gasoline and other transportation fuels in California will decline at any significant rate for the foreseeable future. Note, California's fastest growing fuel segment is aviation jet fuel.

4. Since 2001, the number of California refineries producing California compliant gasoline has fallen by almost 70%, inclusive of planned closures of two major refineries.

5. California's in-state oil refinery capacity for producing California fuels will have declined by 21% from 2023 to 2026, resulting in a net loss of 6.2 million gallons of in-state produced gasoline per day. It would be unrealistic to expect that demand will fall by that amount by April 2026 when the Valero refinery in the San Francisco Bay Area is set to shut down.

6. Based on CEC data, California sourced crude supplies (in-state production) have declined by 65.3% from 2001 to 2024, while dependency on foreign oil has increased by 69% for the same period to over 324 million barrels per year.

7. The passing of SB 237 and the drilling of new wells in Kern County will add an estimated 10,125 barrels of oil per day (bopd) each year through 2030. However, California's statewide oil production is currently declining at a rate of about 18,000 bopd annually, meaning that even with SB 237, **California production will still experience an annual decline at the rate of approximately 7,875 bopd.**

8. The only way to stabilize in-state production is to drill and produce oil in other parts of California in addition to Kern County such as the Santa Barbara Channel and the Los Angeles Basin (LA Basin) which have several billion barrels of recoverable oil resources. These actions, along with a return to historical procedures for well operations and oil producers by CalGEM, can stabilize in-state production and prices while reducing highly pollutive foreign oil imports.

9. SB 237 could partially support the continuing operation of the in-state northbound pipeline system. Based on our estimates of SB 237 production, with an estimated pipeline capacity of 300,000 bopd, and a minimum of 30% capacity utilization required for operational and financial breakeven (90,000 bopd).

10. The demand for the northbound pipeline complex capacity (300,000 bopd) will be reduced by the closure of the Valero refinery and the loss of 149,000 barrels of daily refining capacity.

1.2 Conclusions

The additional wells allowed under SB 237 will not stabilize in-state production, and as a result, in-state production will continue to decline as it is more than likely that producers will not drill 2,000 wells annually. Thus, it will not sufficiently address California's crude oil and gasoline needs and will not provide the much-needed stabilization of production to ensure California's oil and gas infrastructure and energy security in the near and midterm. The only way to stabilize production is to allow drilling in other regions of California like the LA Basin and the Santa Barbara Channel alongside minor, practical changes to regulations and policies which are restricting in-state production.

Furthermore, due to the imminent loss of two and potentially up to four refineries, California will be increasingly dependent on foreign sourced gasoline from suppliers such as India, South Korea, Saudi Arabia, Singapore, and, perhaps, China. India receives 40% of its crude oil from Russia, while China receives a significant portion of its crude stock for gasoline from Iran, Russia, and Venezuela.

Irrespective of SB 237, and as a consequence of market factors, California regulatory and political policies, the naturally occurring declines in crude oil production and significantly diminished refinery capacities, California will need to import gasoline from foreign sources. Therefore, we anticipate significant increases in fuel prices based on various crude oil price assumptions and supply stability.

For the foreseeable 20-year future and based on current estimates, economic and political assumptions and crude oil prices, a realistic estimate of the California's total crude oil demand indicates that it may fall by around 27% to 36%. More aggressive actions and advanced technologies may accelerate the decrease in crude consumption by around 49%.

1.3 Background

The California Energy Commission (CEC) has identified that annual production of 125 million barrels of oil, or approximately 343,000 barrels of oil per day (bopd), is required to stabilize California's petroleum infrastructure, including its pipelines and refineries.[4] Furthermore, the CEC notes that this level of production is necessary to prevent price spikes at the pump. Southern California has ample supplies of recoverable crude oil that, if properly produced, could provide the needed in-state

[4] *JOINT OVERSIGHT HEARING - California's Transportation Fuels Transition* (2025, August 20). https://autl.assembly.ca.gov/system/files/2025-08/08.20.2025_joint-oil-oversight-hearing-background.pdf

production and more. However, Sacramento has, through policies and new laws, intentionally stopped nearly all new oil and gas development in California since 2022.[5] This has accelerated current and future production decline in the state, which now stands at over 6% per year as shown by the yellow curve in Figure 1. Less than 10 years ago, California was the third-largest oil producing state, producing well over 500,000 bopd, however, production stands at about half the amount.[6] Recent legislation, namely SB 237, which will enable Kern County to permit 2,000 wells annually in unincorporated parts of the county, is regarded as the solution to increasing California's oil production to a stable level.[7]

The dotted horizontal line in Figure 1 is the CEC's objective for stable production at 343,000 bopd. Anything under this level increases gasoline prices at the pump, severely increases the risk of gasoline shortages, and requires more imports of crude oil and gasoline, most likely from non-U.S. sources. California already imports the greatest amount of crude oil from sources such as Iraq, Ecuador and Brazil than any other state in the U.S. For example, in 2025, California is expected to import over 67% of its crude oil needs from non-U.S. suppliers, sending roughly $60 million a day of Californians' money overseas in payment. Adding insult to injury, California's increased reliance on non-U.S. suppliers further supports appalling social injustices and severe environmental destruction caused by largely unregulated crude oil extraction as is occurring today in Iraq and Ecuador.[8] [9] [10] These countries have historically been California's largest sources of imported crude oil.[11]

Of critical note, California is already well under the CEC's 343,000 bopd minimum level for stabilization, currently standing at approximately 285,000 bopd as of August 2025 according to data from the California Geologic Energy Management Division (CalGEM), which tracks all oil, gas, and geothermal drilling and production data in California. The "gap" between current level and the CEC's stabilization objective is further accentuated by the substantial in-state consumer demand for crude oil derived transportation fuels and products. There is no evidence that demand has dropped significantly since the pandemic, and only the one-time increase in remote work due to the pandemic in 2020/2021 (instantaneously reducing demand by 10%) has changed demand in the past decade. The most likely estimate is that demand will be substantial for the foreseeable future and that declines in consumption will be minimal in accordance with historical rates. The CEC posits that additional drilling in Kern County, spurred on by SB 237, will be sufficient to increase production; however, this is an unrealistic assumption, the reasons for which are detailed in the following sections.

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[5] *Law limiting new oil wells in California set to take effect after industry withdraws referendum.* (2024, June 27). Cbsnews.com; CBS Sacramento. https://www.cbsnews.com/sacramento/news/law-limiting-new-oil-wells-in-california-set-to-take-effect/

[6] California Department of Conservation Geologic Energy Management. *WellSTAR Data Dashboard* https://app.powerbigov.us/view?r=eyJrIjoiNGQzZWU1N2QtNjNmYy00ODQyLWJlNDUtODBiYjg2MjYyYzIzIiwidCI6IjRjNTk4OGFlLTVhMDAtNDBlOC1iMDY1LWEwMTdmOWM5OTQ5NCJ9&pageName=ReportSectionf17b88a6302e7136a0b1

[7] *Bill Text - SB-237 Oil spill prevention: gasoline specifications: suspension: California Environmental Quality Act: exemptions: County of Kern: transportation fuels assessment: coastal resources.* (2025). Ca.gov. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260SB237

[8] Sandler Clarke, J. (2022, September 29). *Big Oil's dirty secret in Iraq.* Unearthed (Greenpeace U.K.). https://projects.unearthed.greenpeace.org/big-oil-iraq/

[9] Business & Human Rights Resource Centre. (2020, December 11). Ecuador: Indigenous Waorani file lawsuit against Chinese oil company PetroOriental, claiming gas flaring is contaminating their ancestral lands & threatening their survival. https://www.business-humanrights.org/en/latest-news/ecuador-indigenous-waorani-file-lawsuit-against-chinese-oil-company-petrooriental-claiming-flaring-is-contaminating-their-ancestral-lands-threatening-their-survival/

[10] Fernández Aguilar, C. (2023, September 12). *Hundreds of oil spill sites threaten Amazon Indigenous lands, protected areas.* Mongabay. https://news.mongabay.com/2023/09/hundreds-of-oil-spill-sites-threaten-amazon-indigenous-lands-protected-areas/

[11] California Energy Commission. (n.d.). *Foreign sources of crude oil imports to California* https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/foreign-sources-crude-oil-imports

2.0 California Oil Supply Forecasts with SB 237

2.1 CEC Forecast

The CEC has proposed that the additional crude oil production from Kern County alone, resulting from the codification of the Kern EIR and SB 237, will enable a ramp up in oil production to meet stabilization requirements within four years, as shown by their green curve in Figure 1. This would require a net increase in crude oil production of approximately 15,500 bopd annually from 2026 to 2030 to meet the CEC's estimate. However, California's statewide oil production is currently declining at a rate of about 18,000 bopd annually. As a result, approximately 33,500 bopd of new production, or 12,227,500 total barrels of new crude production will need to be added annually to both overcome ongoing decline and achieve a net increase in oil production to reach the CEC's objective of 125 million barrels of in-state annual oil production by 2030.

We believe the CEC's reasoning and estimates are highly unrealistic. First, the new well production rates assumed by the CEC are not supported by data from CalGEM. The CEC stated that average new wells in Kern County will produce 30 bopd with a 7% annual decline rate.[12] However, and to the contrary, a recent analysis of CalGEM data has revealed that the average new well drilled in Kern County produces only about 13.5 bopd and has an average decline of 15.5% annually for the first five years of production.[13] Second, even when regulations were friendlier and inflation-adjusted oil prices were over $150 per barrel in 2013 and 2014, additional drilling in Kern County did not increase production to the levels forecasted by the CEC. Kern County only experienced an average net increase of about 10,000 bopd in both 2013 and 2014, a significant portion of which resulted from well stimulation treatments, which are now banned.[14] Third, around 70% of Kern County's production is of heavy oil, which requires steam flooding.[15] This process is more expensive today than in 2014 due in part to increased Cap-and-Trade fees and Low Carbon Fuel Standard costs.

2.2 Realistic Forecast

An average new well in Kern County costs around $500,000 and will return capital in around four to five years with current oil prices. While there are some projects with more attractive economics, the average new well in Kern County is only marginally economically viable today, as is the case with many oil producing basins in the United States.

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[12] *JOINT OVERSIGHT HEARING - California's Transportation Fuels Transition* (2025, August 20). https://autl.assembly.ca.gov/system/files/2025-08/08.20.2025_joint-oil-oversight-hearing-background.pdf

[13] Ferrar, K. (2025, August 26). *California Oil Wells: Data Shows 13.5 Barrels/Day vs. 30 Claimed - FracTracker Alliance*. FracTracker Alliance. https://www.fractracker.org/2025/08/californias-new-oil-wells-average-13-5-barrels-day

[14] California Department of Conservation Geologic Energy Management. *WellSTAR Data Dashboard* https://app.powerbigov.us/view?r=eyJrIjoiNGQzZWU1N2QtNjNmYy00ODQyLWJlNDUtODBiYjg2MjYyYzIzIiwidCI6IjRjNTk4OGFlLTVhMDAtNDBlOC1iMDY1LWEwMTdmOWM5OTQ5NCJ9&pageName=ReportSectionf17b88a6302e7136a0b1

[15] *Gasoline Retail Prices by Brand Diesel Retail Prices by Region Counties With Thermal EOR Oil Fields Kern County Thermal EOR Oil Fields Kern County Thermal EOR Wells in 2020 Thermal EOR Wells Outside of Kern County in 2020 CHP Locations and Capacity CHP Facility Count, Capacity, Generation, and Grid Sales Featured Topic: California Oil Fields With Thermal Enhanced Oil Recovery PETROLEUM WATCH REFINERY NEWS INSIDE CALIFORNIA DIESEL RETAIL PRICES BY REGION CALIFORNIA GASOLINE RETAIL PRICES BY BRAND*. (2021). https://www.energy.ca.gov/sites/default/files/2021-12/2021-12_Petroleum_Watch_ADA.pdfm

The largest producer in the state, California Resources Corporation (CRC), produces roughly 47% of the oil in Kern County (about 100,000 bopd), while Chevron produces about 35%. The remaining 18% is from smaller independent producers.[16] We do not believe that these producers will come remotely close to drilling 2,000 wells every year, which would require spending approximately $1 billion in drilling capital annually. Specifically:

1. Drilling by the smaller producers will likely return to pre-pandemic drilling levels, with low oil price years. Consequently, we do not expect more than 250 new wells from this group. Conversations with smaller Kern County producers have indicated that oil prices consistently above $80 are needed to economically develop new heavy oil projects. At current Brent crude prices of $60 to $65 per barrel, crude oil prices will have to increase by 25% to 35% to make drilling economically attractive.

2. SB 1137 enables limitations and prohibitions on new drilling. For example, some of Chevron's production in the large Kern River oilfield is in a Health Protection Zone (HPZ) with CalGEM administration and subject to SB 1137 setback rules. Therefore, it is unlikely that new well drilling will be permitted withing the HPZ. An additional business decision is that the economics do not support a large drilling budget, and capital allocation. It is well-known that Chevron is moving its corporate functions from California in favor of Texas and is actively increasing its drilling in the Permian Basin to 1 million barrels a day, which have comparable costs to Kern County.[17] [18] Furthermore, a considerable portion of Chevron's California assets are in the Lost Hills oilfield, which requires now banned well stimulation treatments to recover light oil from the Diatomite formation. Therefore, based on our data and observations, we estimate that Chevron will drill no more than 150-200 new wells annually in California.

3. CRC expects to have free cash flow (after dividend payment) of approximately $360 million this year.[19] If 80% were allocated to new drilling, at most, around 580 new wells could be drilled. Given the weak economics of new drilling, we do not believe CRC will or could drill this many wells in 2026. Unless oil prices increase substantially, we do not believe they will do so in the future. Consequently, we are quite confident, barring any dramatic rise in oil prices or geopolitical events that disrupt production and supply chains, that the impact of SB 237, as shown by the red shaded zone in Figure 1, will be far less than that projected by the CEC.

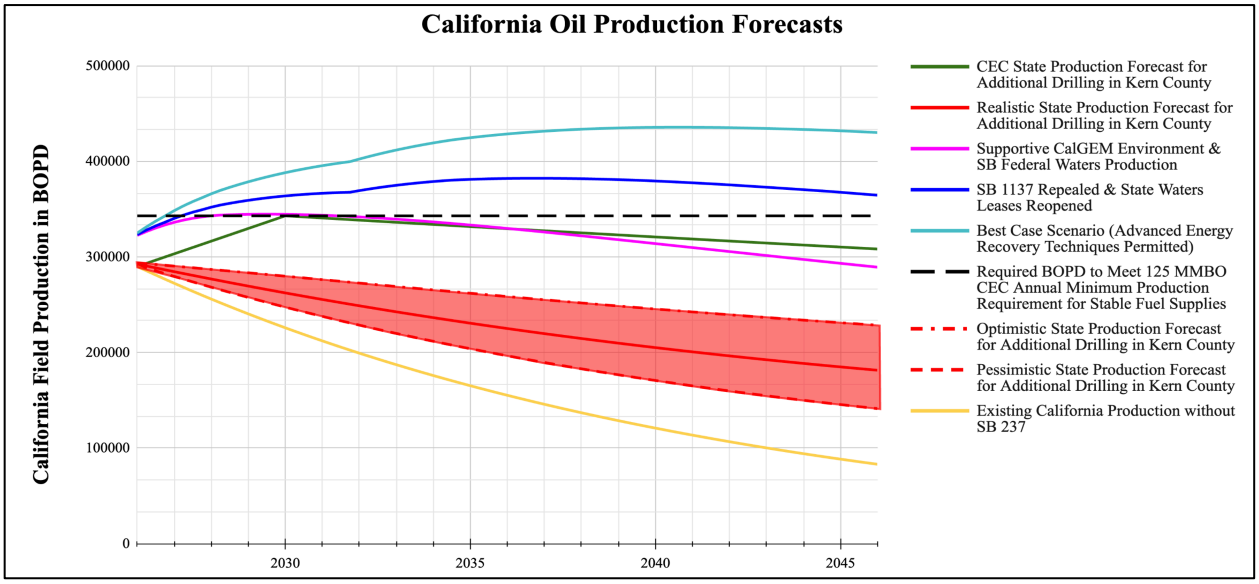
[16] California Department of Conservation Geologic Energy Management. *WellSTAR Data Dashboard* https://app.powerbigov.us/view?r=eyJrIjoiNGQzZWU1N2QtNjNmYy00ODQyLWJlNDUtODBiYjg2MjYyYzIzIiwidCI6IjRjNTk4OGFlLTVhMDAtNDBlOC1iMDY1LWEwMTdmOWM5OTQ5NCJ9&pageName=ReportSectionf17b88a6302e7136a0b1

[17] Chevron Policy, Government and Public Affairs. (2024, September 20). *Chevron announces headquarters relocation and senior leadership changes*. chevron.com. https://www.chevron.com/newsroom/2024/q3/chevron-announces-headquarters-relocation-and-senior-leadership-changes#:~:text=The%20company's%20headquarters%20will%20move,1%2C800%20retail%20stations%20in%20California.

[18] De Lombaerde, G. (n.d.). *Chevron's Permian production tops 1 MMboe/d, executives shift focus to cash flow*. https://www.ogj.com/general-interest/companies/article/55307192/as-chevrons-permian-production-tops-1-million-boe-d-executives-shift-focus-to-cash-flow

[19] https://www.crc.com/static-files/e50659b6-eee5-460f-858d-05b215ccede1

Figure 1



(Source: Data from CEC and CalGEM. Calculations by authors.)

Specifically, as indicated in Figure 1, we have generated various production scenarios, with concentrations on three potential outcomes shown within the red shaded area:

- Optimistic: 1,000 wells per year having an average initial production in years 1-5 of 15 bopd with an average 15.5% annual decline on top of California's current terminal 6.2% decline for existing production.

- Most likely: 750 wells per year having an average initial production in years 1-5 of 13.5 bopd with an average 15.5% annual decline on top of California's current terminal 6.2% decline for existing production.

- Pessimistic: 500 wells per year having an average initial production in years 1-5 of 12 bopd with an average 15.5% annual decline on top of California's current terminal 6.2% decline for existing production.

Clearly, SB 237, which effectively makes much of rural Kern County an oil and gas regulatory island within the state, provides additional sorely-needed oil production and is a step in the right direction. However, as structured, SB 237 does not remotely come close to meeting the state's stabilization requirements, leaving California still severely short on in-state production as shown in Figure 2.

Figure 2
Estimated In-State Oil Production Shortages

Year	2026	2030	2035	2040	2045
Production Shortage in bopd	52,100	70,800	92,700	111,700	127,500
Annual Production Shortage (bbls)	19,017,000	25,842,000	33,836,000	40,771,000	46,538,000

(Source: Data from CalGEM. Calculations by authors.)

2.3 Other Scenarios

The magenta curve in Figure 1 shows projected production assuming our most likely estimates for new production in Kern County resulting from SB 237 in addition to the following:

1. Restarting the oil platforms in federal waters off Santa Barbara (namely the Santa Ynez Unit) in a proper manner that is consistent with California's environmental policies and regulations, beginning in 2026.

2. That CalGEM and the State Water Board immediately return to using historical, well-accepted criteria for actions such as creating aquifer exemptions for zones with non-potable and/or naturally contaminated water, setting historically consistent and safe water injection rates, and permitting workovers on existing wells throughout the state (these state agencies have recently adopted rules that are often arbitrary and unscientific). This would enable additional production from existing infrastructure and equipment that is otherwise held back by various recent regulations.

The dark blue curve represents the magenta curve as well as additional action of repealing SB 1137 and responsibly restarting production in the South Ellwood Field (offshore from UC Santa Barbara), which would allow development of high rate, low per barrel cost wells in the Santa Barbara Channel within the next five years. It would also enable considerable production via wells drilled from existing drilling islands in the LA Basin even sooner. Unlike Kern County, where breakeven costs of new wells are above $45 per barrel, these areas have breakeven costs of under $20. Even in a low crude oil price environment, these wells are highly productive and very economical. Thirty new wells drilled in the Santa Barbara Channel would do more than all the Kern County drilling toward stabilizing production.

While this scenario may seem politically formidable, we believe that some new wells may not require the repeal of SB 1137, since they benefit the environment and human health by reducing toxic local seep emissions, which are particularly severe in the Santa Barbara Channel and in parts of Los Angeles.[20] [21] This is an important nuance and one which must be communicated to all stakeholders, where, hopefully, climate, environmental, and social justice will prevail.

Production from the South Ellwood Field, in particular, would be uniquely beneficial to the state because it is located in state waters. Thus, in addition to normal tax revenues, the state enjoys a 16.67% royalty on every barrel produced, which collectively would amount to around $6 billion over 20 years.

Finally, the light blue curve represents a best-case scenario where provisions from the dark blue curve are kept and well stimulation treatments and enhanced oil recovery with carbon dioxide are allowed to proceed in a commonsense manner that still protects the environment. Before they were banned,

[20] USGS. *California State Waters Map Series—Offshore of Coal Oil Point, California* (2014, August 7). https://pubs.usgs.gov/sim/3302/
[21] Etiope, G., Doezema, L. A., & Pacheco, C. (2017). *Emission of Methane and Heavier Alkanes from the La Brea Tar Pits Seepage Area, Los Angeles* https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027675

well stimulation treatments accounted for approximately 35% of new production in Kern County annually. While Kern county's production today is predominantly of heavy crude oil, well stimulation treatments and enhanced oil recovery using carbon dioxide could enable substantial production of light crude oil while also storing and sequestering carbon emissions. Several oilfields in Kern county such as North Belridge, South Belridge, Lost Hills, Elk Hills, and Buena Vista contain substantial of light oil resources—the first four of which hold approximately 2.8 billion barrels of oil that is recoverable with these technologies within their Diatomite and deep Stevens/Monterey reservoirs.[22] However, these considerable oil resources are not producible today, even under SB 237, because these advanced energy recovery techniques, which required to recover this oil, are still prohibited.

While well stimulation itself is not responsible for severe environmental impacts, the careless disposal of wastewater has been responsible for issues like groundwater contamination and induced seismicity across the United States, especially in regions of Oklahoma and Texas.[23] In California, however, a state-commissioned study by the California Council on Science & Technology (CCST) concluded that well stimulation practices in California oil fields differ significantly from those in the rest of the country and generally pose minimal-to-no risk.[24] For instance, far less water is used due to the smaller subsurface footprint of stimulated wells. No groundwater contamination due to well stimulation in California was found and the potential for future groundwater contamination is also nearly absent as the majority of wells that have been stimulated in California are located within existing oilfields in remote regions in the westside of the San Joaquin Valley where no freshwater aquifers exist.[25] The CCST study also found that oil produced from stimulated wells in California has the added benefit of having a low carbon-intensity score. Still, if well stimulation operations were allowed to resume in California, proper and commonsense oversight should be put into place to ensure people and the environment are protected.

There is a general belief that oil production is polluting. While that may have been true even two decades ago, it is not an accurate representation of modern crude production today–at least not in the LA Basin and in Santa Barbara and Ventura Counties. Successful emissions reductions programs administered by the state have helped to considerably mitigate and eliminate emissions from oilfield equipment, and there have been no major spills for over 10 years. While spills are harmful for the environment and should be avoided, the spills that have happened are small compared to natural seeps in the area, which create the equivalent of a major man-made spill every week. These natural seeps are responsible for the lion's share of the air and ocean pollution in the Santa Barbara area, and likely impact human health near oil fields in the LA Basin, as well. These seeps have been documented to emit *10-100 times* more methane and VOCs into the atmosphere in the LA Basin than crude oil production operations. In the Santa Barbara Channel, natural seeps are estimated to leak between 300-

[22] USGS (2012, April 12). *Assessment of Remaining Recoverable Oil in Selected Major Oil Fields of the San Joaquin Basin, California.* https://pubs.usgs.gov/fs/2012/3050/fs2012-3050.pdf

[23] Skoumal, R. J., & Trugman, D. T. (2021). *The proliferation of induced seismicity in the Permian Basin, Texas.* Journal of Geophysical Research: Solid Earth, 126, e2021JB021921. https://doi.org/10.1029/2021JB021921

[24] California Council on Science & Technology. (2015). *Summary of SB 4: Well stimulation technologies — hydraulic fracturing and other well stimulation.* https://ccst.us/wp-content/uploads/2015SB4summary.pdf

[25] Metzger, L. F., & Landon, M. K. (2018). *Preliminary groundwater salinity mapping near selected oil fields using historical water-sample data, central and southern California* (U.S. Geological Survey Scientific Investigations Report 2018-5082). https://doi.org/10.3133/sir20185082

400 barrels daily, with about half that amount coming from the Coal Oil Point seep field near UC Santa Barbara.[26] The seeps are sourced directly by underlying oil and gas fields. It has been conclusively shown that, over the long term, producing this oil and gas reduces and often eliminates natural seepage in seep-prone California oilfields.[27] By considering the role of natural seeps in local emissions, policymakers in Sacramento and environmental organizations could play a key role in supporting responsible oil production practices that help reduce methane, oil, and VOC releases in these regions.

2.4 Oil and Gasoline Consumption

Gasoline prices are largely formed by the price of crude oil, the supply of crude oil, and the demand for gasoline, or consumption. In California, state mandated taxes and costs for programs such as Cap & Trade, which support the California Highspeed Rail Project, alongside additional taxes and regulatory costs, represent 27% to 30% of the current retail price of $4.66 per gallon.

Despite various claims of significantly reduced consumption, there is no indication that California gasoline consumption has or will decline at any material rate for the foreseeable future. In fact, the data is to the contrary. Consumption based on California Department of Tax and Fee Administration (CDFTA) data for the 2001 to 2024 period indicates that gasoline consumption declined 11.01%, or less than one percent annually. The 10-year average annual gasoline consumption, based on calendar year and CDFTA data, is 14.406 billion barrels of gasoline per day.[28] On average, California consumes between 36 and 40 million gallons of gasoline per day, or 13.1 to 14.6 billion gallons of gasoline annually.[29] CDFTA data for 2024 indicates that California consumed approximately 36.2 million gallons of gasoline per day. The CEC reported that California also consumed around 11.51 million gallons per day, or about 4.2 billion gallons annually of aviation jet fuel in 2024.[30] The CEC also predicts that jet fuel consumption will increase relatively linearly by 20% through 2040, and likely by over 25% through 2045. This would mean California could be consuming approximately 14.38 million gallons per day of jet fuel, or around 5.25 billion gallons per year by 2045. In terms of barrels, this would amount to approximately 125 million barrels of jet fuel consumed annually in California.

Our forecasts do not agree with either the CEC or California Air Resources Board (CARB) estimates as to overall decreases in consumption and the rates of decline of transportation fuel and crude oil consumption as the data simply does not support it. Additionally, due to the Federal recissions for the subsidies for the purchase of EVs, adoption rates for those vehicles are expected to continue to slow.

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[26] Lorenson, T. D., Leifer, I., Wong, F. L., Rosenbauer, R. J., & others. (2011). *Biomarker chemistry and flux quantification methods for natural petroleum seeps and produced oils, offshore southern California* (USGS Scientific Investigations Report 2011–5210). U.S. Geological Survey. https://pubs.usgs.gov/sir/2011/5210/sir2011-5210_text.pdf

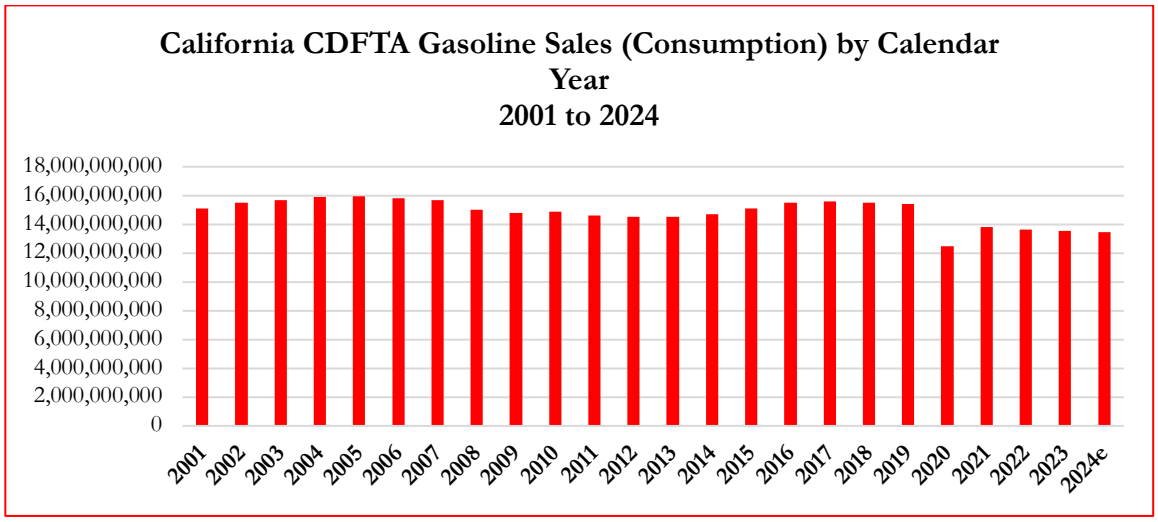
[27] Boles, J. R., Garven, G., & Peltonen, C. (2023). *Hydrocarbon production reduces natural methane seeps in the Santa Barbara Channel.* Marine and Petroleum Geology, 151, Article 106187. https://doi.org/10.1016/j.marpetgeo.2023.106187

[28] *Fuel Taxes Division Statistics & Reports – 2010.* (2025). Ca.gov. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts10.htm

[29] Various including CEC and EIA and authors.

[30] California Energy Commission. (2024, November 7). *Transportation Energy Demand Forecast: Major Updates and Results* (Prepared by A. Freeman, N. Saxena, & F. Kabir; TN No. 259930). 2024 Integrated Energy Policy Report Update, Docket No. 24-IEPR-03. https://efiling.energy.ca.gov/getdocument.aspx?tn=259930

Figure 3



(Source: CDFTA)

The largest drop in California gasoline consumption since the 1980s came during the pandemic years of 2020 to 2021, when demand fell 19%. Since the pandemic trough of 2020, California's GDP increased by 13%, while gasoline consumption has rebounded by 6.8%.[31] For 2024, CDFTA consumption data indicates a slight decline of 0.945% from 37,163,227 gallons per day in 2023 to 36,812,038 per day. For 2025, gasoline consumption is expected to remain about the same as 2024, perhaps slightly less but not materially lower, especially with the plateauing of EV sales in California and the revocation of federal subsidies and tax credits.[32] Notably, in California, consumer demand for aviation fuel increased 113% from 2001 to 2022. For the 2015 to 2024 period, CDFTA data indicates that jet fuel consumption in California, which is the fastest growing fuel product category in the state, increased by 31%.[33] Based on current assumptions, California will require approximately 578,000,000 to 581,000,000 barrels of petroleum annually to support its current economic activity, as well as its exports to Arizona and Nevada. In terms of gasoline consumption, California, alongside the fuel it supplies to Nevada and Arizona, is estimated to require between 14.2 to 15.5 billion gallons of gasoline per year, or about 38,900,000 to 42,470,000 gallons per day.

This estimate is based on historical consumption behavior as adjusted for natural and incentivized declines for gasoline consumption, as well as consumer preferences. If economic activity slows or there is a significant disruption to crude and gasoline supply chains, consumption generally declines. In contrast, increases in aggregate economic activity are usually accompanied by increases in crude oil and gasoline consumption. If consumption remains relative stable or declines only slightly while supplies drop, prices will increase. California is confronting a severe decline of its in-state production and will, most likely, be increasingly dependent on foreign suppliers of gasoline and complex supply

[31] *Fuel Taxes Statistics & Reports.* (2020). Ca.gov. https://cdtfa.ca.gov/taxes-and-fees/spftrpts.htm

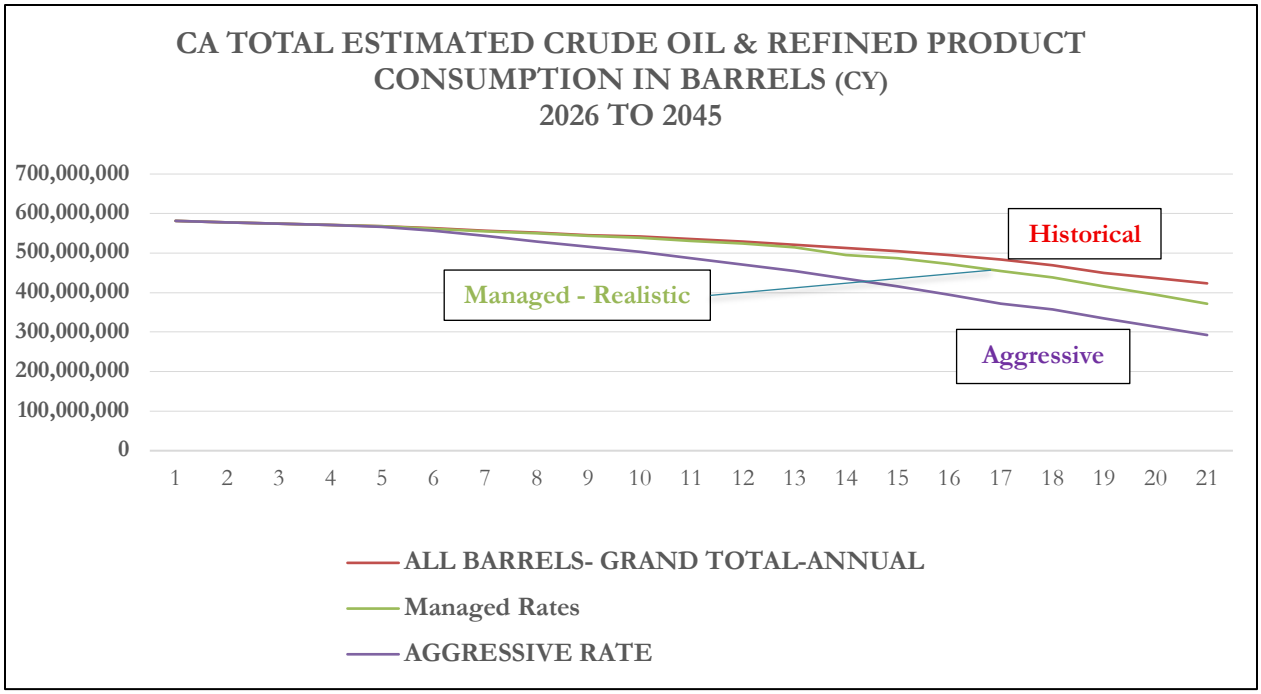
[32] CARB's estimate of 35% adoption rates for EVs in 2026 exceed actual DMV data which shows a 9.6% decline to 22.6% in EV registrations for the first half of 2025. Furthermore, adoption rates appear to have plateaued, for the time being, at 25.03% in 2023, and 25.01% in 2024. Federal subsidies and tax credits were also rescinded on October 1, 2025.

[33] *Fuel Taxes Statistics & Reports.* (2020). Ca.gov. https://cdtfa.ca.gov/taxes-and-fees/spftrpts.htm

chains, leading to supply instability and increased consumer prices for gasoline. The CEC has estimated that 125,000,000 barrels of crude oil in-state production is required to "stabilize" California's energy needs and infrastructure. Accordingly, California will need to import upwards of 453,000,000 barrels of crude oil and refined products annually, predominantly from non-U.S. suppliers. This equates to roughly 4% more crude than 2024 levels from petrostates such as Iraq, Ecuador, and Brazil to equalize supply and demand, assuming, of course, that SB 237 results in an expeditious increase of in-state oil production…but that is, as demonstrated in this study, an ambitious assumption. Furthermore, the CEC estimate of 343,000 bopd as to the amount of in-state crude production necessary to stabilize California's fuel supplies still maintains California's long-term dependency on generally unregulated and highly pollutive non-U.S. crude oil and foreign-sourced gasoline.

Illustrated in the following chart are three scenarios, each depicting estimated changes in California petroleum consumption.

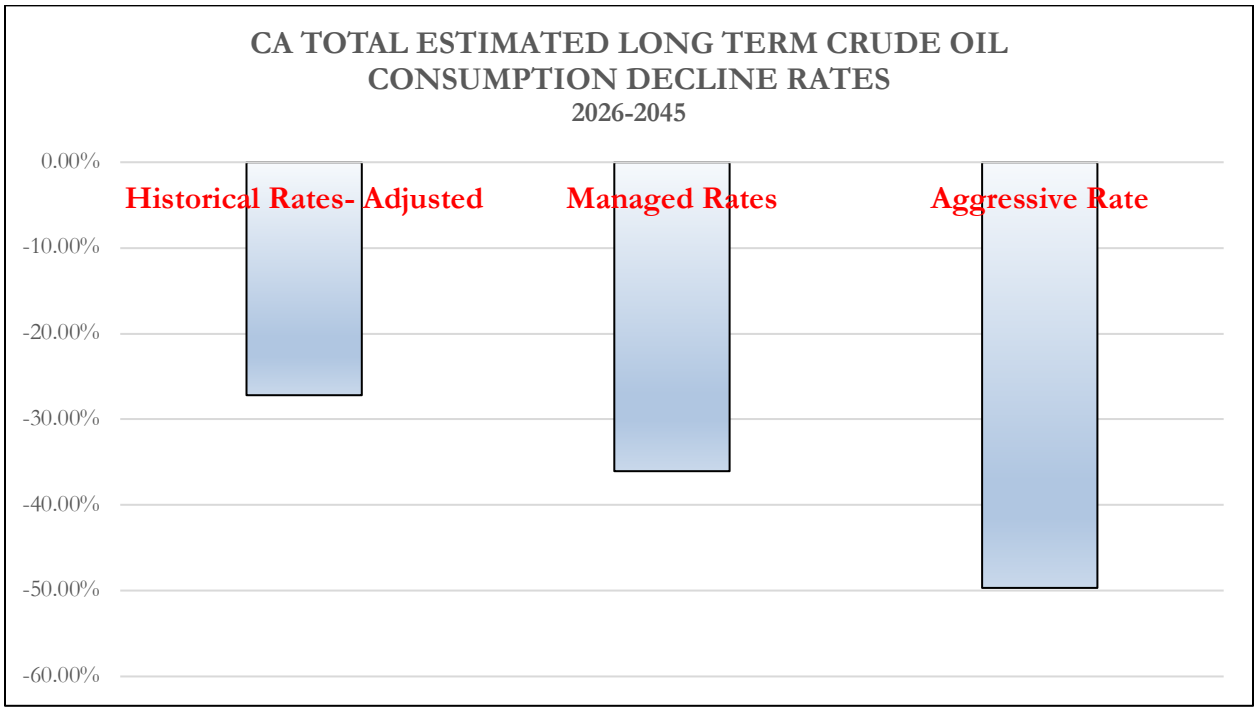
Figure 4



(Source: Data from CEC and CDFTA. Calculations by authors.)

At this time, there are no indications that consumption will decline faster or further, ceteris paribus, than historical averages. As provided in Figure 4 and based on assumptions and estimates as to aggregate economic activity, the most realistic decline in consumption of crude derived fuels and products is associated with historical behaviors, which indicate a 27.18% decline in consumption from 2026 to 2045. A more managed, moderately aggressive approach indicates a 36.05% decline in consumption. The most aggressive approach yields a 49.67% decline, but is currently impractical and not economically feasible. In all scenarios, SB 237 fails to adequately address California's petroleum needs without substantial and likely infeasible increases in imports of non-U.S. crude oil and gasoline.

Figure 5



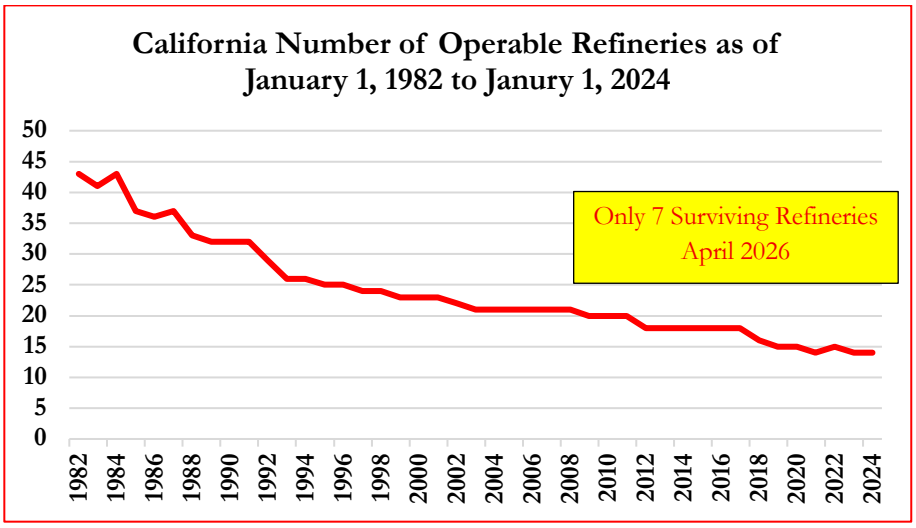
(Source: Data from CEC and CDFTA. Calculations by authors.)

Complicating California's oil production dilemma is the long-term decline and degradation of in-state refineries. As indicated below, the number of refineries in the state has fallen by over 60%. Currently, California is down to just 8 capable of producing gasoline for the state. By April 30, 2026, California will be down to 7 operating refineries capable of producing California compliant fuels.

As indicated in a previous study, California is set to lose between 6.2 to 9.7 million gallons of in-state gasoline production per day.[34] This loss, without a corresponding decrease in demand, will most likely be made up by imports of foreign sourced gasoline. The importation of such quantities of gasoline will create logistical issues which are exponentially more complex than in-state production and pipeline usage. For example, both port and road congestion are expected to increase, the number of maritime shipments is expected to increase significantly, thus increasing spill risk, greenhouse emissions and air pollution. Furthermore, fuel barges will be needed to transport both crude and gasoline to refineries and converted gasoline storage facilities that do not have maritime access. This will also lead to presently air pollution-burden port communities in California experiencing up to a fivefold increase in the number and frequency of pollutive maritime vessels to facilitate this risky and piecemeal solution to adequately supply California with fuel per CARB's own analysis.[35] In all instances, the cost of fuel will increase, and any disruption in the supply chains will adversely impact prices and fuel availability.

[34] Mische, Michael A. *ENSURING CALIFORNIA-(5-5-25).* (2025, May). Google Docs. https://drive.google.com/file/d/1CVsBHQ0s4FX57xQD2iy0ZD1V_MlKJMZX/view
[35] California Air Resources Board. (2022, December). *2022 Scoping Plan for Achieving Carbon Neutrality.* https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf

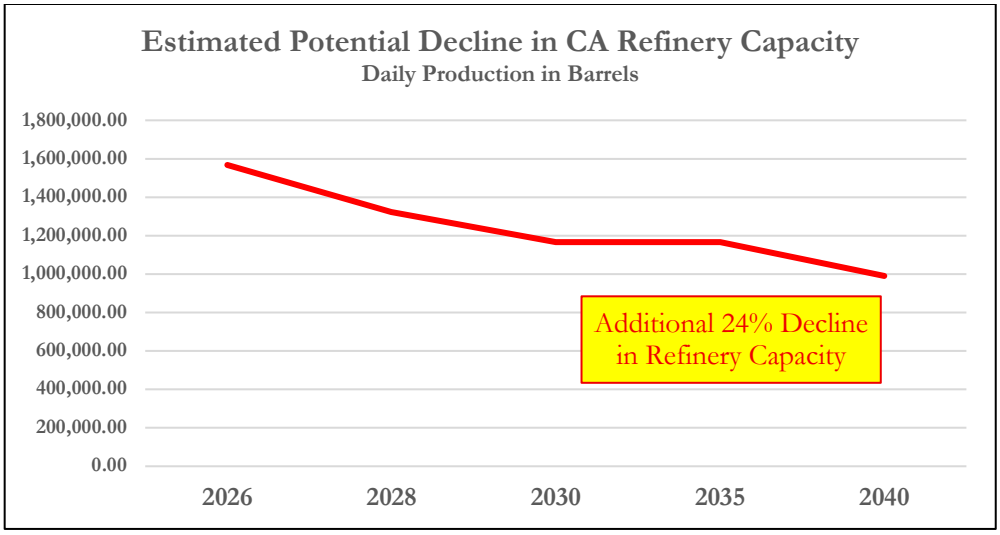
Figure 6



(Source- https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=8_NA_8O0_SCA_C&f=A)

Since 2023, California refinery processing capacity has dropped by a collective 21%.[36] Projecting forward, given the current regulatory environment and high operating costs, California could experience additional refinery closures. This would exacerbate fuel supplies and drive prices higher. Below is a chart depicting the potential loss in California refinery processing capacity over the forthcoming years. The estimated losses would be accelerated by the closure of the major northbound pipeline system and, despite SB 237, reduced in-state production of crude oil.

Figure 7



(Source: Data from CEC. Calculations by authors.)

[36] CY 2023 to April 2026.

2.5 Impact on Retail Gasoline Prices

Multiple factors inform gasoline prices. Based on our analysis of varying supply levels, most probable fuels consumption, and the impact of losing two or more refineries, California retail gasoline prices will increase, irrespective of SB 237. The increase is attributed to reduced refining capacity, increased cost associated with the importing of gasoline, increased transportation costs, declining in-state production, and relatively constant demand. The worst scenario for consumer gasoline prices would be the continued loss of in-state refinery capacity and the loss of the primary northbound pipeline system due to a lack of sufficient in-state crude oil production. The combination of these two events would potentially be catastrophic to the California economy. Furthermore, the loss of pipeline infrastructure could result in an armada of crude oil tanker trucks transiting on Interstate Highway 5 as some of the crude oil from the San Joaquin valley would have to be shipped via tanker truck once the pipeline is shut down. Collectively, these factors and events could potentially drive consumer prices, at relatively constant demand, towards $12 a gallon or more. The chart below summarizes the possible prices that California could be confronting based on the various scenarios of SB 237, as well as assumptions for Brent crude oil prices, wholesale prices, pipeline availability, refinery capacities, foreign sources of gasoline, transportation costs, and increasing regulatory costs associated with Cap & Trade, state excise tax, plus other state and local regulatory costs.

Figure 8

CALIFORNIA GASOLINE PRICE RANGE ESTIMATES UNDER SB 237				
Possible Retail Price Implications Under Various Production, Supply & Pipeline Utilization Rates				
Current (Base)	Optimistic	Most Likely	Pessimistic	Worst
4.62 - 5.77	5.91-7.66	6.26-7.78	8.46 - 10.00+	10.00 - 12.18

(Source: Calculations by authors.)

3.0 Summary

SB 237 is a step in the right direction, but it will not, by itself, stabilize in-state oil production. Depending on the price of crude oil and supply stability, gasoline prices are expected to increase by $0.50 to more than $1.00 per gallon in the next year. If in-state crude oil output, pipeline infrastructure, and refinery production are not stabilized, California will be become increasingly susceptible to extreme price shocks during times of geopolitical unrest and supply chain disruptions. Additional refinery closures would likely also result.

To stabilize production and provide the necessary stabilization to ensure California's energy security, California needs to suspend and reverse the recent procedural changes within CalGEM and the State Water Board designed to stop oil production. California also must encourage and incentivize oil and gas production in other areas of the state besides Kern County, particularly in the Santa Barbara Channel and in the LA Basin. In these areas, new oil supplies can come online quickly, while also reducing local pollution and greenhouse gas emissions, thereby contributing to climate and environmental justice. Moreover, the profitability of these activities is typically considerably higher than in Kern County, resulting in far greater revenue to the state.

The additional production enabled by SB 237 will be insufficient to have any material influence on long term prices and will fail to provide an adequate supply of in-state crude oil; but, the passage of SB 237 is an important first step and a public acknowledgement by Governor Newsom and the State Legislature that increasing in-state crude oil production is essential to the California's economic vitality and stability. At best, SB 237 will help to slightly curb inevitable increases in consumer prices, but alone, will neither reduce nor reverse them. Furthermore, the regulatory components of consumer gasoline prices such as Cap & Trade, Low Carbon Fuel Standard, the state excise tax, and local state taxes are expected to increase annually, thus contributing to higher consumer gasoline prices.

As we have demonstrated by our analysis, SB 237 alone will not ensure adequate supplies and stability. Our analysis indicates that what is required to sustain California's surviving refineries and pipeline infrastructure is a comprehensive plan to create a more hospitable operating environment and statutory assurances allowing additional crude oil production from both onshore and offshore California producers, as well as extended use of existing and rehabilitated pipelines. California's energy stability objectives would be well served by revisiting the extent and limitations imposed by recent legislation such as SB 1137, AB 1167, AB 3233, and the various powers of regulatory agencies such as the California Coastal Commission, State Water Board, and CARB.

California now has the opportunity to demonstrate that environmental responsibility and energy security are not mutually exclusive. Facilitating efficient permitting and responsible production alongside well-informed, commonsense regulations will ensure California's ecosystems and communities are safeguarded while oil production is concurrently increased in a conscientious and environmentally sound manner. Policies which reduce and restrict in-state production are

counterproductive as they do not reduce California's demand for crude oil. Instead, they lead to the outsourcing of California's oil supply to oil producing regions with minimal labor and environmental regulations. This, in turn, ultimately increases emissions and pollution levels worldwide while also reinforcing California's support for human rights injustices and environmental destruction abroad by purchasing and using foreign sources of crude oil. Considering this reality, California can lessen its overall climate and environmental impact by producing oil in California responsibly, using additional in-state production to replace pollutive, foreign-sourced oil imports. This will ensure that, as the state moves toward alternative energy sources, the crude oil consumed within California is sourced under strict environmental oversight and benefits the state socially and economically.

It is also essential to recognize that, while there have historically been cases of negligent producers in California, today, the state hosts producers who comply with strict environmental and safety regulations, distinguishing the state from other regions such as Texas where regulations are often lacking and environmental issues persist. These modern California producers demonstrate that environmental and climate goals can coexist with oil and gas production. California can set an example for environmental leadership by establishing a straightforward regulatory framework that incentivizes responsible producers and upholds accountability while still appropriately punishing irresponsible and reckless producers. The state can set an example both at home and abroad by demonstrating that energy security, economic stability, environmental preservation, and social wellbeing can all be maintained. In doing so, California can create a future for itself where communities are protected, emissions are mitigated, pollution is reduced, and the energy transition is managed equitably and responsibly. This would demonstrate to the rest of the world that environmental leadership, economic health, and responsible oil production can occur simultaneously, beginning right here in California.

For the Golden State, there is extreme urgency. Failure to act and reform policies now will only lead to higher fuel prices, more pollution, additional emissions, further support for injustices abroad, and contribute to additional instability in California's energy markets as more producers and refiners voluntarily exit the state for more attractive and economically superior environments. Ultimately, a lack of action will also cause additional socioeconomic and environmental inequities in California wherein the least fortunate and most vulnerable individuals, families, and communities will disproportionately fall victim to higher prices, pollution, and a lack of affordable and reliable energy, further driving socioeconomic disparities and reinforcing cycles of poverty as they are the least able to absorb higher costs. Without meaningful and practical policy changes that prioritize both energy security and real environmental progress, California risks sacrificing its own prosperity, climate goals, and environmental leadership, while failing to achieve the social equity and sustainability milestones its people deserve, undermining California's broader goals of environmental justice and economic opportunity for all its residents.