# ADDRESSING U.S. NATIONAL SECURITY VULNERABILITIES CREATED BY CALIFORNIA OIL AND REFINERY POLICIES:

# THE NEED FOR A RAPID RESPONSE FUEL RESERVE

**By**

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## EXECUTIVE SUMMARY

This study has evaluated the regulatory implications of California crude oil and refinery regulations and policies for U.S. national security and force readiness. As a result of that work, we offer the following conclusions and principal recommendations for Presidential consideration.

### Primary Conclusion

State policy and regulations have made California increasingly dependent on imported crude oil and refined fuels, creating a direct vulnerability to U.S. military readiness in the Pacific. More than 61 percent of the crude oil processed by California refineries is now imported, mainly from Iraq, Saudi Arabia, Brazil, Guyana, and Ecuador, making California the most dependent of all 50 states on foreign sources. As refinery capacity shrinks, California increasingly imports gasoline, diesel, and jet fuel from foreign refineries, particularly in India and South Korea. Much of this supply must pass through the Strait of Hormuz, the Strait of Malacca, the Bab al-Mandeb Strait, or the Panama Canal, all chokepoints. California has no inbound crude-oil pipelines from the rest of the United States and no direct access to the Gulf Coast Strategic Petroleum Reserve. California, Nevada, and, to a lesser extent, Arizona therefore function as a petroleum island. This import-dependent island, though, also serves as the principal domestic staging area for U.S. military operations in the Pacific, creating a serious military vulnerability and national security threat.

### Principal Recommendations

Our principal recommendation is to establish a federally controlled California Rapid Response Fuel Reserve (RRFR) containing approximately 22.8 to 53.4 million barrels of crude oil and 961 million to 2.2 billion gallons of finished military fuels through Presidential invocation of the Defense Production Act of 1950. Establishing the RRFR is not as simple as adding more crude production and crude oil storage. A strategically enabled RRFR that supports U.S. security interests will require a five-point holistic strategy that integrates (1) increasing crude oil production, (2) expanding crude oil and fuel storage capacity, (3) increasing refinery capacity and output, (4) adding new and enhanced pipeline capacity, and (5) using the Defense Production Act of 1950 to implement the strategy and recommendations. Specific action steps include:

1. Increase CA Crude Oil Production. Reverse the decline in California crude production and refining capacity by developing California petroleum resources from federal military lands where possible, using extended-reach drilling and modern reservoir technology to reduce conflict with California over surface operations and permitting.
2. Expand Idled Refinery Capacity and Pipeline Infrastructure. Reactivate and expand idled pipelines and refineries, including the San Pablo Bay Pipeline and the Benicia, Rodeo, and Santa Maria refining system, and integrate them into the existing military-fuel distribution network serving California, Nevada, and Arizona.
3. Increase Refinery Capacity and Output. Construct a refinery near Las Vegas, supplied by an approximately 300-mile eastbound crude pipeline from Bakersfield, with a parallel westbound products pipeline returning fuel to Bakersfield.
4. Diversify and increase storage. Maintain a geographically distributed storage system at Bakersfield, the proposed Las Vegas refinery, operating California refineries and terminals, pipeline facilities, ports, and critical military installations.
5. Federal Action. Use the Defense Production Act to establish and integrate the RRFR under presidential and federal authority (DoW), enabling items 1 to 4 above and coordinating the

immediate release of inventories and continuous replenishment during a prolonged Pacific conflict.

**Background**

California's growing dependence on imported crude oil and refined fuels has created a significant vulnerability to U.S. military readiness in the Pacific. More than 61 percent of the crude oil California refineries process is now imported, primarily from Iraq, Saudi Arabia, Brazil, Guyana, and Ecuador. California also increasingly imports (over 20%) finished gasoline, diesel, and jet fuel from foreign sources, particularly in India, South Korea, in addition to the Bahamas and China. Much of this crude oil and fuel must pass through strategic maritime chokepoints—including the Strait of Hormuz, the Strait of Malacca, the Bab al-Mandeb Strait, and the Panama Canal. Currently, two of these four chokepoints are under attack by Iran and Iranian proxies.

California has no inbound crude-oil pipelines or product pipelines connecting it to the rest of the United States and no direct access to the existing Strategic Petroleum Reserve, whose facilities are concentrated along the Gulf Coast. The state, along with Nevada and to a lesser extent Arizona, is therefore effectively a petroleum island. At the same time, California is the principal domestic staging area for U.S. military operations in the Pacific. Its refineries and fuel-distribution systems support major installations in California, Nevada, and Arizona, including Naval Base San Diego, Camp Pendleton, Edwards Air Force Base, Travis Air Force Base, NAS Lemoore, Nellis Air Force Base, Luke Air Force Base, and NAS Fallon.

This vulnerability has intensified as California crude-oil production has declined by nearly 75 percent from its historical peak, in spite of billions of barrels in reserve, and several major refineries have voluntarily closed or converted to renewable-fuel production. California's crude-refining capacity has fallen from nearly 2 million barrels per day in 2020 to around 1.3 million barrels per day. The decline reflects state policies that restrict offshore development, drilling and workovers near sensitive receptors, well stimulation, water injection and disposal, enhanced oil recovery, pipeline operations, and long-term refinery investment. California's specialized fuel standards, cap-and-trade costs, permitting burdens, and policies intended to phase out petroleum have also contributed to refinery closures and conversions. The remaining system cannot reliably replace lost foreign supplies or rapidly expand military-fuel production during an emergency.

A major Pacific conflict could simultaneously interrupt California's foreign crude supply, curtail imported finished fuels, and render forward fuel depots in Guam, Japan, South Korea, and the Philippines vulnerable to missile, air, naval, and drone attacks. Preliminary estimates for this study indicate that sustaining a high-intensity Pacific operation could require about 20 million barrels of fuel in the first month alone. Depending on the duration and intensity of operations, an effective reserve may require approximately 22.8 to 53.4 million barrels of crude oil and 961 million to 2.2 billion gallons of finished military fuels.

**Storage Locations and Capacity**

The proposed California Rapid Response Fuel Reserve would be geographically dispersed. Major crude-oil and finished-fuel storage components would be located at Bakersfield and the proposed Las Vegas refinery, but these facilities would supplement rather than replace storage at operating California refineries, product terminals, pipeline pumping stations, ports, and military installations. Existing and expanded storage in the Los Angeles-Long Beach and San Francisco

Bay refinery and terminal systems would preserve access to established product pipelines. Forward storage would remain at or near Naval Base San Diego, Camp Pendleton, Edwards, Travis, Lemoore, Beale, Nellis, Fallon, Luke, and other strategically important bases. Dispersing inventory reduces the risk that losing one refinery, pipeline, port, or tank farm would disable the reserve, while keeping JP-5, JP-8, diesel, and other fuels close to military users.

**Mitigating California Regulatory Constraints through The Defense Production Act & Presidential Action**

California has the petroleum resources needed to support the proposed RRFR. Government assessments and independent analyses indicate that the state may contain approximately 30 billion barrels of remaining recoverable oil. Particularly important opportunities lie beneath and adjacent to Vandenberg Space Force Base, Naval Base Ventura County, Naval Weapons Station Seal Beach, and other federal properties. Extended-reach wells drilled from federal land could access major offshore or neighboring resources without new offshore platforms. We selected federal land as the initial development focus because federal surface control and a direct military-readiness purpose reduce conflicts with California over siting, permitting, and surface operations. This approach does not eliminate every dispute, especially for minerals beneath state waters or on nonfederal land, but it places the first projects where federal ownership and national-security authority are strongest. Developing all of California's crude oil reserves, including those located outside of federal lands, could enable California's oil production to exceed 1.1 million barrels per day within several years, comparable to the expected medium-term increases of Venezuelan oil production.

Our analysis indicates that America's national security interests require increased refinery capacity in or near California. However, expanding refinery capacity in California could prove difficult because of the state's highly restrictive environmental laws and anti-refinery policies. Reopening the Valero and Phillips 66 complexes to recover lost capacity is feasible but costly and will face strong opposition. Nonetheless, as the President has directed, increasing the nation's refinery capacity is essential. Nevada, as we describe in this study, is a viable location for a new refinery that could meet both commercial and national security needs. Additionally, asserting federal jurisdiction over, and possibly acquiring ownership of, idled refinery operations in California could provide a feasible path for the federal government to mitigate issues associated with California's policies and regulations. This could enable a more straightforward reanimation of existing, idled refinery infrastructure in California that is already integrated into established pipeline and distribution infrastructure to Western U.S. military installations at a reduced cost compared to the construction of a new refinery.

Building a new refinery near Las Vegas, in addition to restarting the Valero Benicia and Phillips 66 Santa Maria-Rodeo refineries, aligns with the President's aspirations for new refinery investment and the nation's security needs, and could also attract more foreign investment in the U.S. Under our proposed design, California crude would be gathered and stored in Bakersfield and transported approximately 300 miles east via a new crude pipeline that generally follows the Kern River Gas Transmission corridor. A parallel products pipeline would return gasoline, diesel, and military jet fuel west to Bakersfield, and crude and finished-fuel storage would also be maintained at the Nevada refinery. Although significantly more expensive than upgrading existing and idled California refineries, the Nevada alternative would place the principal new refining asset outside California's refinery, climate, and closure policies, and would incorporate the latest state-of-the-art innovations, design concepts, and environmental protections. As with production from federal

land, it reduces political and regulatory exposure while retaining access to California crude oil. The Kern River gas pipeline is a corridor rather than an automatically transferable right-of-way, so new easements and federal, Nevada, and California approvals would still be required.

**Integrated Implementation**

A simple conventional oil storage reserve alone would be insufficient because inventories depleted during an extended conflict must be replenished. The proposed RRFR system would combine stored crude oil and finished fuels with accelerated California production, the new Nevada refinery, continued operation and reanimation of California refineries, expanded pipeline movements, and military logistics management and distribution. Upon a triggering national-security event and presidential authorization, stored fuel would be released immediately, while domestic production and refinery output would increase to sustain and replenish the RRFR. Replacing 20 million barrels of reserve inventory within six months would require approximately 220,000 barrels per day of incremental crude production and the corresponding pipeline and refinery capacity.

In the interests of national security, Presidential action under the Defense Production Act, together with coordinated efforts by the Departments of War, Energy, Interior, and Treasury, would provide the authority, oversight, and management needed to establish, implement, and operate this integrated RRFR fuel-supply capability.

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## PURPOSE OF THIS STUDY

California's dependence on foreign crude oil and fuels, such as gasoline and jet fuel, and the susceptibility of its supply chain to disruptions and geopolitical events have only been exacerbated by events in the Middle East. California's "War on American Energy"[4] intentionally forces the state to rely on crude oil imports from petro-nations such as Iraq, Saudi Arabia, Brazil, and Ecuador, which now make up approximately 61% of California refinery oil sources.[5] Most Middle East crude oil imports to California must pass through the Strait of Hormuz or the Bab-al-Mandeb Strait, as does the oil Indian and South Korean refiners use to produce California gasoline. The state also cannot rely on Washington state for sufficient fuel or on the Strategic Petroleum Reserve (SPR) on America's Gulf Coast to support its national security needs, since no inbound, interstate pipelines connect either the SPR or Washington state to California.

Addressing military fuel needs and national security is far more complex than simply building storage tanks in Kern County or installing anchoring ocean buoys off the coast of Santa Barbara. Given the abundance of ideas, conflicting interests, and the importance of national and fuel security, policymakers would benefit from a data-driven, thorough, and independent research approach to determine what the nation needs and California's role in addressing those needs. Specifically, we address five important questions:

1. How do California's regulatory policies regarding crude oil and refinery production affect U.S. force readiness and national security?

2. In the event of a national emergency or kinetic military operations in the Pacific, would the U.S. benefit from dedicated crude oil and refined fuel reserves in California?

3. Does California have sufficient crude oil reserves, production, pipeline, and refinery capacity to support emergency or prolonged military operations?

4. Assuming Presidential approval and under the auspices of the Department of War, where should the Rapid Response Fuel Reserve (RRFR) be located?

5. Assuming Presidential approval and under the auspices of the Department of War for RRFR capability in California, as discussed herein, from which geographic areas can crude oil be sourced, produced, and refined?

This paper examines the five essential issues outlined above, as well as others, and aims to provide policymakers with an independent perspective.

[4] https://www.energy.gov/documents/fact-sheet-california.
[5] Data based on California Energy Commission.

## 1.0 INTRODUCTION

Petroleum was essential to the U.S. Second Industrial Revolution. Beginning in 1800, the mechanization of the American economy demanded energy–coal, then oil, and later gasoline–which drove a massive transformation from a largely agrarian economy to a manufacturing-based one with greater social mobility. Fossil fuel energy enabled the transportation industry, stimulated migration to factories, powered electrification, enabled the automobile, and supported America's emergence as a global economic power. As America's economy grew, U.S. foreign policy and its influence on world affairs slowly shifted from a largely isolationist stance with limited regional interests to a global presence. The Monroe Doctrine, the realization of "manifest destiny," and the buildup of the American navy signaled the arrival of the U.S. as a major force on the world's stage. America's role and its industrial might during World War II would forever change the trajectory of traditional European powers, solidifying America as an economic and military superpower.

The U.S. oil and gas industry is an integral part of the U.S. economy and is vital to national and economic security. At $1.7 trillion, the oil and gas industry comprises about 8% of U.S. GDP and employs about 11.3 million people, representing 5.6% of total U.S. employment. This 8% may not seem significant, but critically, it is the first 8% on which all other industries rely. An additional 3.4 million jobs are associated with oil- and gas-affiliated industries and businesses. In the U.S., the oil and gas industry pays, on average, about 85% more than the national average annually. On average, the oil and gas industry accounts for about 16% of total capital expenditures annually in the U.S. In contrast, the transportation and healthcare sectors account for 5.3% and 6.3% of capital expenditures, respectively.

Without oil and gas, the other 92% of California's and the nation's GDPs would be impossible to achieve. Without petroleum, asphalt cannot be made, roads cannot be paved, and steel cannot be produced. Without gasoline, natural gas, and diesel fuels, agricultural production would be a fraction of what it is today. Electric vehicles (EVs) may ultimately replace internal combustion engines, but today, fully electric vehicles account for less than 7% of California's 39 million vehicles. Moreover, no viable alternatives exist at scale to replace gasoline, jet fuel, and many other petroleum-based products and petrochemicals. While the state may try to legislate decreases in demand for fossil fuels, long-term data show only a modest annual decline in gasoline consumption and marked increases in jet fuel consumption.[6]

California has an abundance of oil reserves totaling around 30 billion barrels, yet state regulations and policies have largely prevented modern development of these resources in recent years.[7] It possesses eight the nation's super-giant oil fields, all of which have produced well over a billion barrels each. Development of California's abundant oil resources with modern technologies and techniques could lead to well over 1 million barrels per day of in-state oil production. In spite of these world-class, extensive resources, California is the most reliant of all states on crude oil imports from the Middle East and, recently, South America, as well as on finished fuels produced in India, South Korea, and China. This dependency, which is expected to grow and is discussed, creates numerous vulnerabilities, including economic, national security, and military concerns, and complicates military planning.

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[6] Based on California Energy Commission data.

[7] Ring, E. (2025, June 4). California's indispensable heavy oil. *California Policy Center*. https://californiapolicycenter.org/californias-indispensable-heavy-oil/

## 2.0 U.S. OIL SHOCKS…REALITIES of DEPENDENCY

### 2.1 The 1970s and the U.S. Energy

In the 1970s, the U.S. experienced two unanticipated, episodic petroleum events, commonly called "oil shocks." The first occurred in 1973, and the second began in late 1978. From the mid-1960s to the end of the 1970s, the U.S. experienced social turmoil, rapid cultural change, and economic transformation. During this period, the U.S. escalated and then withdrew its military presence in Vietnam; suffered the assassinations of Robert Kennedy and Dr. Martin Luther King; decoupled its currency from the gold standard; successfully landed on and returned from the moon; implemented sweeping environmental regulations for the automotive industry; engaged in diplomacy with the People's Republic of China; saw President Nixon voluntarily resign from office; and experienced double-digit mortgage rates and high inflation.[8] That's only the short version. We must also add the two oil shocks, which led to a nationwide energy crisis, gasoline shortages, gasoline rationing, lower national speed limits, and a U.S. President telling the public to lower their thermostats in the winter and turn them up in the summer.[9]

After reaching a then-peak high production of 9.6 million barrels a day in 1970, U.S. crude oil production fell, partly because of the depletion of low-cost crude reserves, partly because of wage and price controls, and largely because of the removal of import bans. Demand for petroleum in the 1970s remained strong and did not abate. Consumption was further boosted by new EPA regulations on internal combustion engines, which took effect for the 1972 model year. Commenting on the Clean Air Act, Interior Secretary Rogers C. B. Morton estimated that "auto emission-control devices added 300,000 barrels a day to gasoline consumption, nearly 5 percent."[10]

By 1973, the nation was heavily dependent on crude oil imports, especially from OPEC and the Middle East. From 1970 to 1973, U.S. crude oil imports soared 353%, from 43.7 million barrels to 198.2 million barrels. In mid-1973, months before the first oil shock in October, H.A. True, Chairman of the National Petroleum Council, wrote to Secretary of the Interior Roger Morris that the United States "…has no apparent alternative except to become increasingly dependent upon foreign oil." Morris further noted, "The substantial dependence of the United States on imports has major national security implications." In September 1973, one month before the first oil shock, James Atkins of the U.S. State Department, in testimony before the House Subcommittee on Foreign Affairs, stated, "We believe that the first priority of the United States is to limit its increasing reliance on imported supplies of oil. . . . We believe that the foreign policy pitfalls of an excessive reliance on imported energy are too serious to risk."[11] **Shockingly, this is the same situation that California has created for itself and has exposed the nation to…53 years later.**

### 2.2 The Oil Shock of 1973

On October 6, 1973, the U.S. faced its first major oil shock when the Fourth Arab-Israeli War, also known as the Yom Kippur War, erupted between Israel and a coalition of Arab nations,

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[8] Inflation hit 12.5% in 1979, and mortgage rates for conventional home loans exceeded 13%.

[9] Jimmy Carter's 1977 sweater speech on climate still irks Republicans - The Washington Post. (n.d.). https://www.washingtonpost.com/history/2024/10/01/jimmy-carter-sweater-environment/

[10] Cowan, E. (1973, January 21). Energy Crisis. NYTimes. https://www.nytimes.com/1973/01/21/archives/lowering-the-bars-on-heating-oil-energy-crisis.html

[11] Knittel, C. R. (2014). The Political Economy of Gasoline Taxes: Lessons from the Oil Embargo. Tax Policy and the Economy, 28(1), 97–131. https://doi.org/10.1086/675589

including Saudi Arabia, Egypt, and Syria. Honoring its defense agreements, President Richard Nixon provided Israel with a $2.8 billion (equivalent to $21.6 billion in 2026) defense aid package. In retaliation for U.S. support for Israel, Arab OPEC members cut oil production by 5% and imposed an oil export embargo on the U.S.

The rapid, unexpected embargo on oil supplies triggered a surge in crude oil prices that dealt a severe, almost debilitating blow to the U.S. economy, especially the U.S. automotive industry. Almost immediately, global oil supplies plummeted by 14%, while crude oil prices surged by 71%, rising from $3.01 to $5.12 per barrel. Less than three months later, in December 1973, Arab OPEC members again cut production by 25% from September levels. In response, the price of OPEC-sourced oil to the U.S. rocketed to $11.65 per barrel — an increase of 287% in about 90 days. From October 1973 to January 1974, U.S. crude oil imports fell a staggering 36.25%, with no compensating increase in U.S. crude production. With no significant offset in demand, pressure mounted on crude oil, gasoline, jet fuel, and diesel supplies. Within 90 days of the October war, average U.S. retail gasoline prices had increased 44.7%, from $0.38 to $0.55 per gallon; airlines canceled routes, truckers went on strike, and Americans waited in lines, sometimes as long as 8 hours, for gasoline. What followed were price controls, gasoline rationing, reduced speed limits, long lines at retail gasoline outlets, gasoline shortages, price spikes, and high inflation. By March 1974, the Arab nations formally ended the oil embargo, and supplies and prices both moderated. However, the resulting Middle Eastern geopolitical landscape provided fertile ground for a second oil shock in 1979, which still haunts the U.S. and Western nations to this day.

### 2.3 The Oil Shock of 1979

The second oil shock of the 1970s began in Iran in 1979. Since 1941, Iran had been ruled as a monarchy under Shah Mohammad Reza Pahlavi (Shah). A series of reforms that boosted Iran's GDP by double digits and spurred modernization, along with what some believe was the Shah's persona, were unpopular with religious traditionalists. By the mid-1970s, discontent had grown, sparking open dissent and dissatisfaction with the monarchy. What began as a relatively small demonstration in October 1977 soon escalated into a full-scale revolution. Suffering from cancer and medical mistreatment, the Shah spent most of 1977 and 1978 in relative seclusion and under the care of European physicians. In September 1978, the Shah received a dire (fatal) prognosis. Internal discontent continued to foment, culminating in an October 1978 strike by Iranian oil field workers. Oil production was cut by 75%, leading to a 119% jump in global crude prices from January 1978 to January 1979.[12]

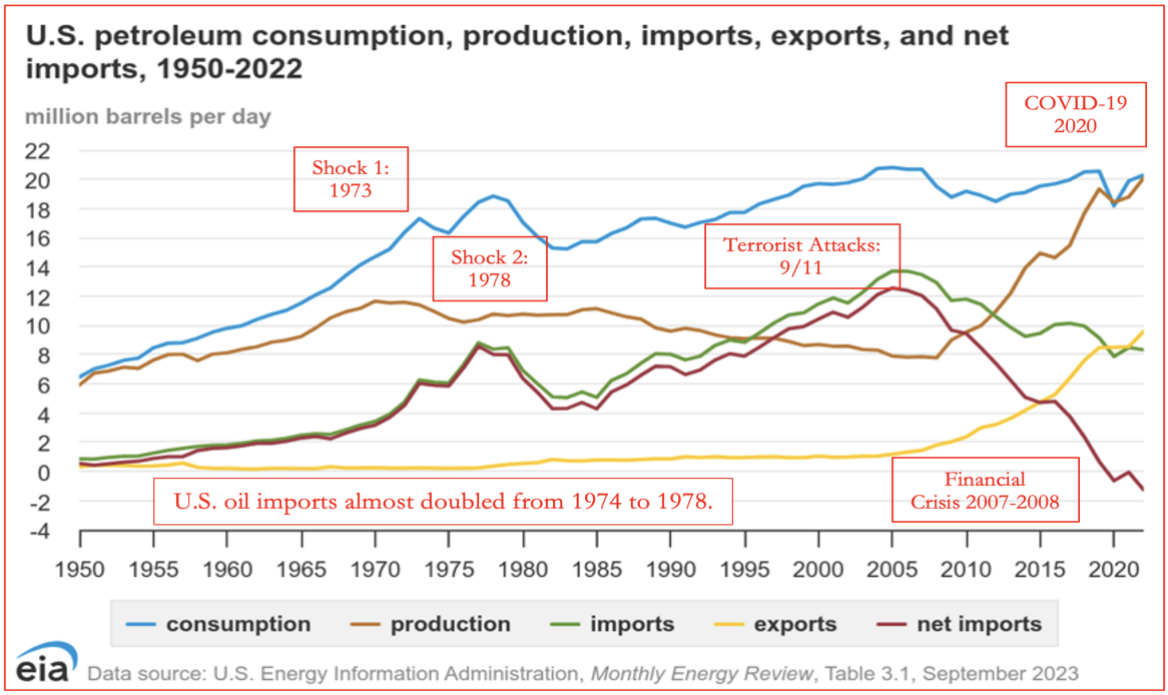
Despite government actions, dissension grew, and by January 1979, the Shah's government had been overthrown, and most members had left Iran. Stripped of power, the Shah fled the country. In his wake, the Islamic Republic of Iran, an Islamic fundamentalist state, was established, with Ayatollah Khomeini, who had been living in exile in France, as its supreme leader. In October 1979, as his health deteriorated, the Shah requested permission to seek urgent medical and humanitarian care in the U.S., a request which Iran condemned. Then-U.S. President Jimmy Carter, desperate for Congressional ratification of the SALT II Agreement with the Soviet Union, initially resisted the Shah's request but eventually succumbed to pressure from Henry Kissinger to permit the Shah's entry into the U.S. for treatment. The Shah was treated in New York City but experienced complications that required a longer-than-anticipated stay, further inciting Iran. In

[12] EIA.

retaliation for the U.S. allowing the Shah to receive medical treatment and remain in the U.S., and for its support of Israel, Iranian revolutionaries seized the U.S. Embassy in Tehran and held 52 Americans hostage for 444 days. Even on his death, Khomeini would declare that "The USA is the foremost enemy of Islam."[13]

Since its founding as a theocracy, Iran has practiced jihad, exported Islamic fundamentalism to other nations, supported theocratically aligned groups such as Hamas, Houthis, and Hezbollah, and declared Israel and the U.S. ideological threats to Islam. These are central tenets of Iran's statecraft and foreign policy. Reacting to the potential spread of fundamentalism, attacks on his regime, long-disputed territorial issues, access to the Shatt al-Arab river, and a direct call by Ayatollah Khomeini to overthrow Iraq's Saddam Hussein, Iraq invaded Iran in September 1980. That conflict, which resulted in an eight-year stalemate, was marked by what history has called the "tanker war," in which both Iranian and Iraqi oil tankers, storage facilities, and pipelines were bombed and targeted with missiles. From January 1978 to January 1979, average U.S. gasoline prices rose 98%, from $0.63 to $1.25 per gallon, before peaking at $1.38 per gallon in April 1981, reflecting a 119% increase over almost 4 years.

**Figure 2.1**
**U.S. Oil Shocks: Production, Consumption, Exports & Imports**




## 2.4 The Oil Shock Scare of 2026

The oil shocks of 1973 and 1978 were driven primarily by supply shortages. During those periods, the U.S. relied heavily on oil imports and on OPEC's production decisions. Over the years, the U.S. has increased its crude oil production, discovered significant new oil deposits, established

[13] Seradottin. (2026, September 1). شبكة السراج في الطريق إلى الله. شبكة السراج. http://www.alseraj.net/maktaba/kotob/english/Miscellaneousbooks/LastwillofImamKhomeini/occasion/ertehal/english/will/lmnew1.htm.

the Strategic Petroleum Reserve (SPR), and benefited from technological advances in oil production, automotive engineering, electrical power generation, and renewable fuels. In contrast to California, which increased its reliance on oil, gasoline, and jet fuel imports, the rest of the U.S. was essentially energy independent by 2026, achieving an all-time-high level of oil production of around 13.97 million barrels per day.[14]

A combination of factors led the U.S. and its ally, Israel, to take military action against Iran on February 28, 2026. Operation Epic Fury[15] substantially eliminated much of the Iranian Air Force, Navy, and missile launchers; however, Iran had mined the sea routes and maintained missile capabilities across the Strait of Hormuz. Consequently, oil exports from the Middle East, through which around 20% to 22% of the world's oil supply passes, were effectively halted. Despite a series of ceasefires, Iran persisted with intermittent attacks on third-party nations and oil tankers, culminating in Iran placing a $30,000 bounty for each U.S. military personnel killed or captured.[16]

As anticipated, military action and political instability in the Middle East have significantly affected crude oil and U.S. gasoline prices. However, the impact was far less severe than the oil shocks of the 1970s. Brent crude oil's closing price rose 101% from $55.98 on January 7, 2026, to $112.95 on April 4, 2026, then fell 27.1% to $82.40 on August 14, 2026.[17] Meanwhile, the average price for all gasoline formulations in the U.S. rose 47.4% from $3.046 on January 7, 2026, to $4.49 for the week ending August 10, 2026.

Significantly, although the average retail price of gasoline in the U.S. rose to a January through August 2026 high of $4.510, it remained well below the highest average price for all formulations under the Biden Administration, which was $5.016 on June 13, 2022, during peacetime. In California, gasoline prices peaked at an all-time high of $6.437 a gallon on June 14, 2022, under Governor Newsom, or 28.51% higher than the national average.

[14] US oil production rises to record high in April, EIA says. (2026, June 30). *Reuters*. https://www.reuters.com/business/energy/us-oil-production-rises-record-high-april-eia-says-2026-06-30/

[15] House, W. (2026, April 8). Peace Through Strength: Operation Epic Fury crushes Iranian threat as ceasefire takes hold. The White House. https://www.whitehouse.gov/releases/2026/04/peace-through-strength-operation-epic-fury-crushes-iranian-threat-as-ceasefire-takes-hold/

[16] Iran army chief promises $30,000 bounty for each US service member. (2026, August 16). Iran International. https://www.iranintl.com/en/202608163934

[17] TRADING ECONOMICS. (n.d.). Brent oil - Price - Chart - Historical Data - News. https://tradingeconomics.com/commodity/brent-crude-oil

**Figure 2.2**[18]
**Comparison of Approximated Price Increases**
**Middle Eastern Conflicts 1972-1974 and 2026**

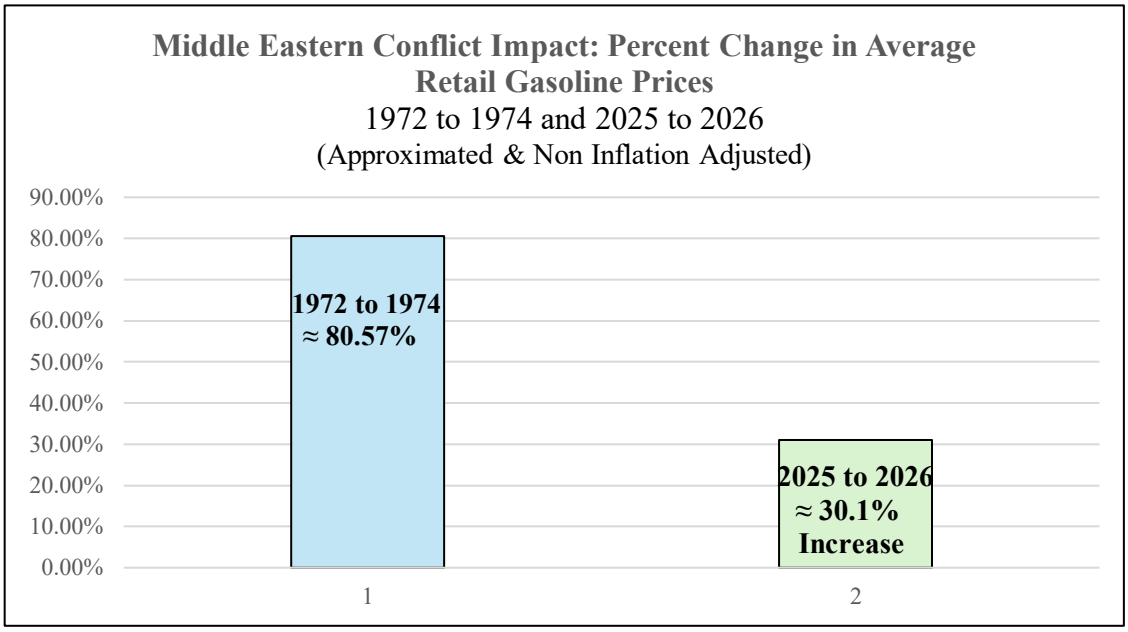
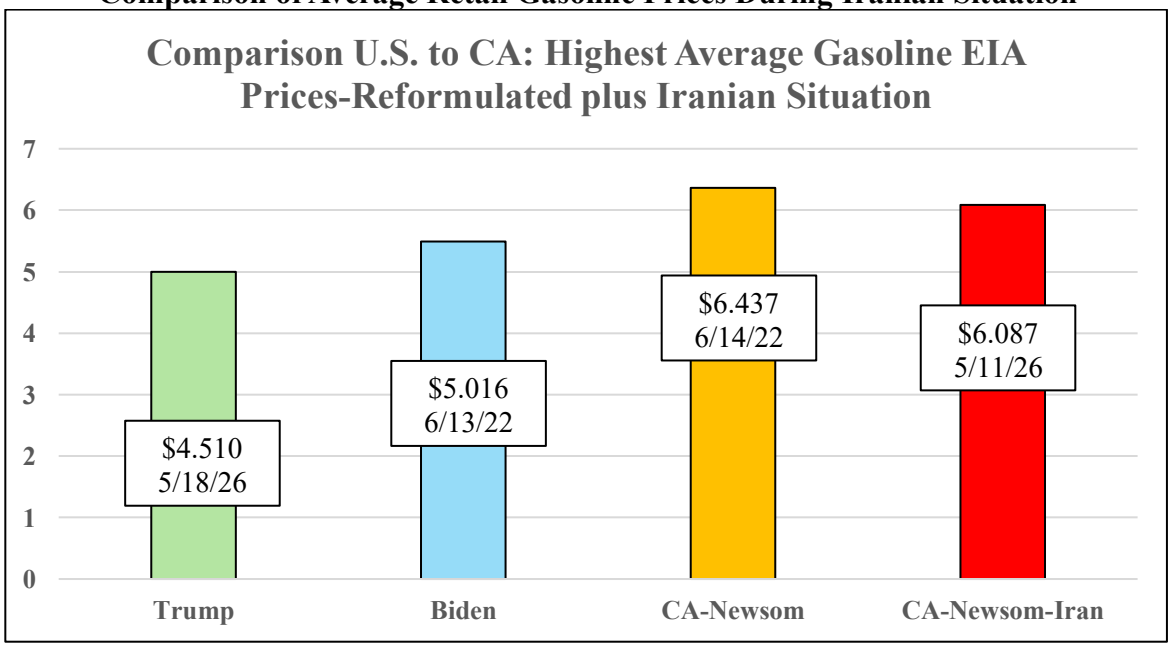



**Figure 2.3**[19]
**Comparison of Average Retail Gasoline Prices During Iranian Situation**




[18] Based on various data sources, approximated and for illustrative purposes only.
[19] Gasoline and diesel fuel update. (n.d.). U.S. Energy Information Administration (EIA). https://www.eia.gov/petroleum/gasdiesel/

As of the date of this study, the situation remains stable but unresolved, with President Trump considering declaring the Strait of Hormuz "U.S. territory."[20] The U.S. has removed sea mines from the Strait of Hormuz and escorted over 1,500 ships through the Strait[21] and some 750 million barrels of oil.[22] [23] In late August, U.S. forces were augmented by the U.S.S. George Washington, a Nimitz-class supercarrier, which was on station in the Middle East in early September. Compounding the situation in the Middle East are kinetic actions between Saudi Arabia and the Houthis of Yemen. The Houthis have initiated a series of attacks on Saudi western ports on the Red Sea and on the east-to-west pipeline connecting them and have disrupted shipping through the Bab-el-Mandeb Strait.[24]

[20] Folk, Z. (2026, August 18). Trump Labels Map Of Strait Of Hormuz 'New U.S. Territory' After Passing 60-Day Deadline For Deal. https://www.forbes.com/sites/zacharyfolk/2026/08/18/trump-labels-map-of-strait-of-hormuz-new-us-territory-after-passing-60-day-deadline-for-deal/

[21] House, W. (2026b, August 29). President Trump was right: America controls the Strait of Hormuz. The White House. https://www.whitehouse.gov/releases/2026/08/president-trump-was-right-america-controls-the-strait-of-hormuz/

[22] Magee, C. (2026, August 26). Why Hormuz remains high risk for ships despite US claims of mine-clearing. Al Jazeera. https://www.aljazeera.com/news/2026/8/26/why-hormuz-remains-high-risk-for-ships-despite-us-claims-of-mine-clearing

[23] Ravid, B. (n.d.). U.S. conducting stealth operation to transport oil through Hormuz. https://www.axios.com/2026/08/19/hormuz-iran-oil-gulf-trump

[24] https://www.youtube.com/watch?v=Yu9g2D0Ut_I

## 3.0 STRATEGIC PETROLEUM RESERVE

### 3.1 The U.S. Response to the 1973 Oil Shock and Impetus for the SPR

The oil shocks of the 1970s created an energy crisis in the U.S. and demonstrated that they can cause substantial economic chaos through escalating prices and supply chain disruptions. Seminal studies have shown that persistent spikes in oil prices are asymmetric relative to changes in GDP, as they negatively affect GDP. Similarly, petroleum and finished fuels, such as jet and diesel, are essential to maintaining U.S. force readiness and national security.

The SPR grew out of the oil shocks and energy crises of the 1970s and the economic and national security vulnerabilities created by reliance on Middle East and OPEC oil producers. The idea of petroleum as a strategic asset and the need for a Strategic Petroleum Reserve (SPR) date to the turn of the twentieth century. America's growing political influence and rise to global power required a navy and petroleum to fuel it, a point not lost on U.S. Presidents William Taft, Woodrow Wilson, Calvin Coolidge, and Warren Harding.[25] As early as 1910, the U.S. Navy urged Congress to curtail oil sales to foreign nations, noting that "…any foreign nation can draw on the production of the oil fields of the United States to an unlimited extent, and can thus accumulate in time of peace a reserve supply." Recognizing the importance of an "oil reserve," President Taft, using Executive Orders, directed the U.S. Department of War and the U.S. Department of the Interior to establish the Naval Petroleum Reserve (NPR) for the U.S. Navy[26] at the Elk Hills[27] and Buena Vista[28] oil fields in California, and at the Teapot Dome oil field in Wyoming.[29] The Elk Hills and Teapot Dome oil fields would become the focal point of the most infamous pre-Watergate U.S. political scandal involving President Warren Harding and California oil barons Harry Sinclair and Edward Doheny. President Harding would establish a Naval Reserve in Alaska in 1923.[30] In December 1940, additional naval and aviation fuel reserves were established at the Red Hill Bulk Fuel Storage Facility (Red Hill) above Pearl Harbor, Hawaii. The Red Hill Facility operated from 1944 until its initial decommissioning in 2022 and could store 250 million gallons, or 5.9 million barrels, of crude oil and fuels.

Since the inception of national oil reserves in 1912, California has, at least until recently, played an important role. Established by Executive Orders beginning in 1912 under President Taft, the Elk Hills NPR-1 (one of four in the country) was intended to guarantee an emergency supply of crude oil for Navy ships. The government-owned petroleum and oil shale properties at Elk Hills were originally designated as a reserve supply of crude oil to fuel U.S. naval vessels during shortages or emergencies. The Reserves remained largely undeveloped until the 1970s, when, under the Ford Administration, the nation began seeking ways to maximize its domestic oil

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[25] The Naval Petroleum Reserves were established by various Presidents during the 1912 to 1921 and enlarged in the 1940s under President Rooselvelt. See, Office of the White House Press Secretary. (n.d.). NAVAL PETROLEUM RESERVES. In THE WHITE HOUSE. https://www.fordlibrarymuseum.gov/sites/default/files/pdf_documents/library/document/0248/whpr19750331-003.pdf

[26] The U.S. Department of Navy would assume administrative responsibility for the Naval Reserves on June 4, 1920.

[27] Established by President Taft's Executive Order on September 2, 1912, creating Naval Reserve-1 in Elk Hills, Kern County, California, and initially comprising 38,072 acres, later expanded to 46,095 acres in the 1940s.

[28] Established by President Taft's Executive Order on December 3, 1912, creating Naval Reserve-2 in Buena Vista, Kern County, California, comprised of 30,181 acres.

[29] Established by President Wilson's Executive Order on April 30, 1915, Teapot Dime Wyoming created Naval Reserve- 3.

[30] Established by President Harding's Executive Order on February 27, 1923, Alaska created Naval Reserve-4 comprised of 37,000 square miles.

supplies. In 1976, Congress passed the Naval Petroleum Reserves Production Act, authorizing full commercial development of the Reserves. Known as the "Open Up" legislation, the law enabled the Naval Petroleum Reserves to operate in a production mode rather than a conservation mode.

In 1981, the Elk Hills oil and natural gas field in California was the top oil-producing field in the Lower 48 states. In September 1992, the field produced its one billionth barrel of oil, becoming only the thirteenth field in the Nation's history to reach that milestone. DOE sold the crude oil, natural gas, and liquid products produced from the reserves at market rates. While DOE managed it, Elk Hills generated over $17 billion in profits for the U.S. Treasury. DOE sold it to Occidental Petroleum in 1998.[31]

### 3.2 The Department of Energy

The Arab Oil Embargo of 1973 and the resulting “energy crisis” were abrupt “wake-up” calls for America’s elected officials and policymakers. Before the October 1973 oil shock, there was no Department of Energy, and U.S. energy policy was loosely coordinated among various agencies, departments, and bureaus. The Department of the Interior and the Department of Defense (now the Department of War) held most regulatory and planning powers, while other agencies played limited roles. As a result, the U.S. had only a minimal national energy strategy. The Department of Energy (DOE) was created in 1977 during the Carter Administration. However, the Nixon and Ford Administrations laid its conceptual foundations. In response to the oil embargo and the deepening energy crisis plaguing the U.S., President Nixon used Executive Orders to hastily create the Federal Energy Office (FEO) on December 4, 1973, an early precursor to the DOE. Headed by William Simon and John Sawhill, the FEO focused on increasing U.S. energy supplies and lowering energy costs through a series of initiatives.

The 1973 energy crisis served as a brutal “wake-up” call to America about its dependence on foreign oil. In 1974, Congress passed and the President signed the Federal Energy Administration (FEA) Act of 1974 (P.L. 93-275). The FEA consolidated the FEO and several energy-related departments, functions, and agencies. Its primary mission was to collect and analyze data to increase U.S. energy production from multiple sources, including oil and gas, coal, geothermal, and solar, while stabilizing supplies, reducing the nation’s dependence on foreign suppliers, and lowering costs.

A critical FEA initiative was establishing the National Energy Information Center (NEIC), which was empowered to collect, assess, and provide data to the President, Congress, and policy planners. Today, the NEIC is known as the Energy Information Administration (EIA). The NEIC published the National Energy Outlook (still used today) for the public and policymakers. Completed in November 1974, the Project Independence Evaluation System (PIES) became a widely adopted tool and an integral part of the NEIC process. PIES comprised three categories of interrelated data, including engineering, mathematical, and economic models used for energy modeling and management and to support policymaking. As researcher Bill Chapman noted, the NEIC and PIES work did not identify specific policies, but it established the basis for longer-term strategies and

[31] U.S. Department of Energy. (2025, April 18). *Naval petroleum reserves*. Energy.gov. https://www.energy.gov/hgeo/opr/naval-petroleum-reserves

programs for oil and energy independence. They were critical to the actions taken in 1974 by the Nixon Administration, in 1975 by President Ford, and later by President Carter.[32]

Instability in the Middle East, coupled with heightened Soviet aggression, continued to increase U.S. vulnerability to foreign oil sources, geopolitical events, and spot market volatility. To mitigate exposure to crude oil supply chains, Congress established the Strategic Petroleum Reserve (SPR) in 1975. Congress created the SPR under the Energy Policy and Conservation Act of 1975, codified as P.L. 94-163, and President Ford signed it into law on December 22, 1975. It was intended to provide a "safety net" to help address U.S. dependence on foreign oil, stabilize domestic prices, and ensure an adequate oil supply in the event of a national emergency or war. In 1991, the U.S. Congress enacted P.L. 101-383, permitting the use of SPR assets "for short periods to resolve supply interruptions stemming from situations internal to the United States."[33]

### 3.3 The Strategic Petroleum Reserve (SPR)

America's SPR is the world's largest strategic petroleum reserve. The U.S. government owns the oil stored in the SPR, and it does not include refined products such as gasoline, jet fuel, or diesel fuel. Once SPR oil is released and sold to refiners, it must be refined, distributed, and replaced. The SPR has a maximum authorized capacity of 714 million barrels of crude oil, stored in 61 highly secure underground salt caverns along the Gulf Coast of the United States.[34] On average, the caverns are more than 2,550 feet below the ground surface and 2,260 feet tall.[35] Based on 2017 estimates, the SPR represents about $5.0 billion in infrastructure investment.[36] The SPR contains blends of light-sweet and light-sour unrefined crude oil from U.S. and foreign sources. Crude oil stored in the SPR is "light" crude with an API gravity of 30° to 40° and is segregated by sulfur content. SPR crude oil with a sulfur content of .50 % or less is classified as low sulfur "sweet," while crude oil with a sulfur content of .50% to 1.99% is classified as "sour."[37] According to the DOE, about 40% of SPR oil is sweet.[38]

The four SPR sites are connected to road, maritime, and pipeline oil distribution systems that support the rapid delivery of crude oil to approximately 50% of total U.S. refinery capacity. Depending on conditions, SPR assets require 13 to 30 days to cycle from authorization to release, through refining and distribution, before they are available for government, military, or consumer use. Notably, **none of the current SPR storage assets are within convenient range of California refineries**. Because there are no inbound pipelines into California from the east, the only way to import SPR crude oil into California is by rail tanker cars, trucks, or maritime vessels via the Panama Canal, a key strategic military target and chokepoint. Vessel transit time from Louisiana to Los Angeles is 12 to 16 days, which, in times of military need, would add considerable stress

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[32] Chapman, Bert, "Strategic Petroleum Reserve: Origins and Evolution" (2022). *FORCES Initiative: Strategy, Security, and Social Systems.* Paper 5. See, Chapman, B. (n.d.). Strategic Petroleum Reserve: Origins and Evolution. Purdue e-Pubs. https://docs.lib.purdue.edu/forces/5

[33] United States Congress. (1990). Energy Policy and Conservation Act Amendments of 1990. https://www.congress.gov/101/statute/STATUTE-104/STATUTE-104-Pg727.pdf

[34] Currently, there are 61 caverns. See, https://www.energy.gov/sites/default/files/2023-03/Infographic%20SPR%2002_2023.pdf.

[35] U.S. Department of Energy. (2023). STRATEGIC PETROLEUM RESERVE. In U.S. Department of Energy. https://www.energy.gov/sites/default/files/2023-03/Infographic%20SPR%2002_2023.pdf

[36] SPR Quick Facts. (2026, August 24). Energy.gov. https://www.energy.gov/hgeo/opr/spr-quick-facts

[37] SPR FAQs. (2026, May 20). Energy.gov. https://www.energy.gov/hgeo/opr/spr-faqs#Q13

[38] SPR FAQs. (2026b, May 20). Energy.gov. https://www.energy.gov/hgeo/opr/spr-faqs#Q13

and costs to supply chains. Under the most favorable conditions, counting from the date of Presidential authorization, SPR oil would require 16 to 30 days to arrive at the Port of Los Angeles after Presidential release. A major military conflict in the Strait of Taiwan would most likely not last that long, amplifying the need for rapid oil and fuel reserves in California.

Transit times and proximity to the SPR may be moot for California. Most of California's six surviving refineries are configured to process, or prefer to process, the heavier, more sour crude oils endemic to California, Canada, and the Alaskan North Slope. About 40% of SPR oils are lighter, sweeter crudes, and best processed by Gulf Coast and East Coast refiners. The Iranian situation has proven that California is, for all practical purposes, a petroleum island, which presents a unique exposure and challenge for U.S. military and national security planners.

By statute, the President holds command authority for the SPR, with operational and administrative responsibilities under the direction of the Department of Energy. Under EPCA, P.L. 94-163, the President of the United States may authorize the release (drawdown) of oil from the SPR if three conditions are met: "(a) an emergency situation exists and there is a significant reduction in supply which is of significant scope and duration; (b) a severe increase in the price of petroleum products has resulted from such emergency situation; and (c) such price increase is likely to cause a major adverse impact on the national economy."[39] Under EPCA §3(8), 161(d)(2), the determination of "emergency" is at the discretion of the President.[40] If the President authorizes a drawdown, released product could reach retail markets in as few as 13 days, depending on conditions, refining capacity, and distribution.[41] However, drawdowns and sales are different. A sale of oil from the SPR can be replenished by a purchase to restore it. Federal law regulates the amount of oil that may be drawn down (released) from the SPR. The maximum amount of oil that may be released is 4.4 million barrels per day for up to 90 days.

[39] United States' legislation on oil security. (2020). https://www.iea.org/articles/united-states-legislation-on-oil-security

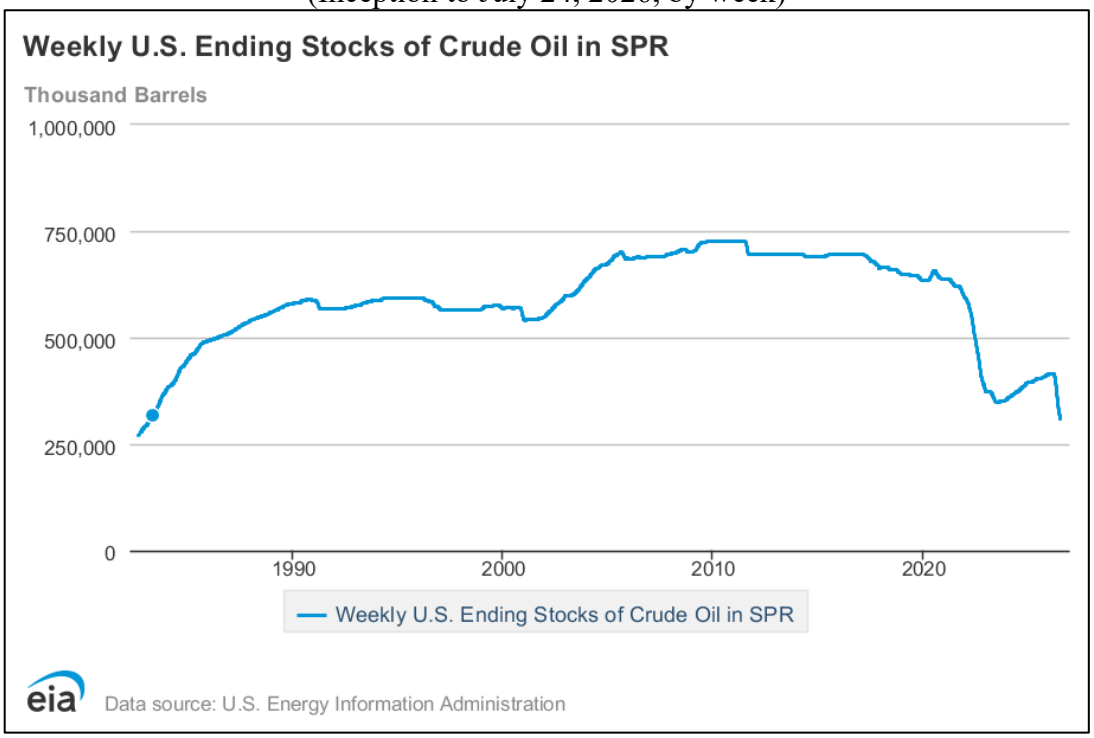
[40] United States' legislation on oil security. (2020). https://www.iea.org/articles/united-states-legislation-on-oil-security

[41] United States' legislation on oil security. (2020). https://www.iea.org/articles/united-states-legislation-on-oil-security

### 3.4 SPR Drawdowns and Releases

Throughout its history, the SPR has undergone drawdowns (releases). As of July 26, 2026, the U.S. had 307,650,000 barrels of oil in its SPR, representing 43% of its 714-million-barrel capacity. As shown in Figure 3.1, reserves as of 7/26/26 are at their lowest level since 1983.

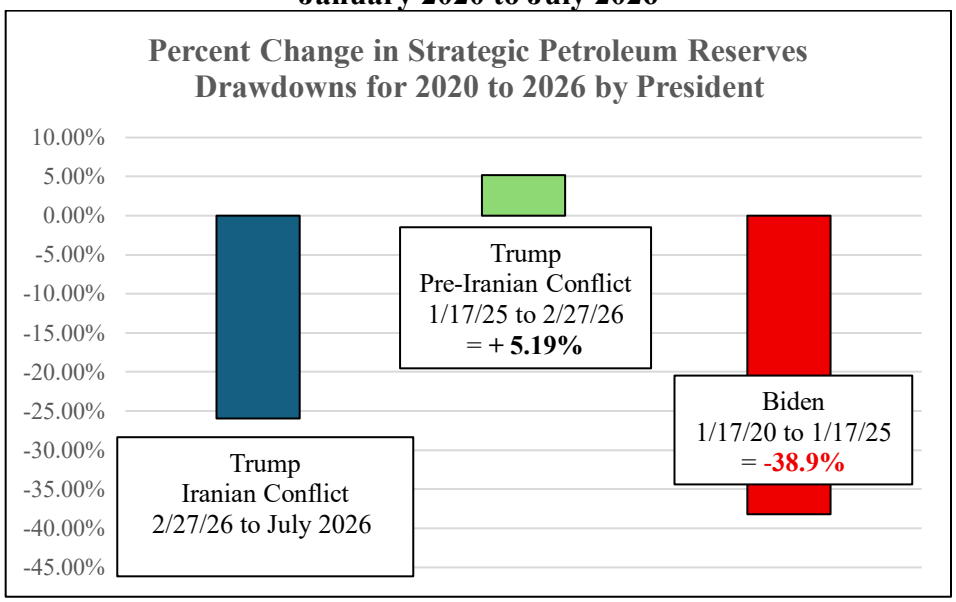
**Figure 3.1: U.S. Strategic Petroleum Reserves**[42]
(Inception to July 24, 2026, by week)




The first major test of the SPR inventories and system resiliency came during the George H.W. Bush Administration in the 1991 Persian Gulf War. The second occurred during Hurricane Katrina in 2005, which devastated America's Gulf Coast. The most significant drawdown of the SPR occurred during the Biden Administration. From January 2021 to January 2025, crude oil levels in the SPR fell 39% due to drawdowns intended to reduce rising gasoline prices. From January 2025 to February 2026, SPR inventories rose 5.2% during the first year of the second Trump Administration. By comparison, during the Iranian situation under Trump, SPR volume dropped 26% from February 27 to July 24, 2026. Figure 3.2 compares the various SPR drawdowns from 2020 to 2026. In addition to the SPR, U.S. refiners collectively hold more than 426 million barrels of crude oil, or 21.03 days' supply, excluding SPR stocks.

[42] Weekly U.S. Ending Stocks of Crude Oil in SPR (Thousand Barrels). (n.d.). Www.Eia.Gov. Retrieved September 2, 2026, from https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WCSSTUS1&f=W

**Figure 3.2: Comparative Percent Change in SPR Inventories**
**January 2020 to July 2026**



## 4.0 CALIFORNIA OIL, PIPELINE AND REFINERY STRUCTURE

In 2025, the U.S. produced nearly 14 million barrels of crude oil and consumed 20.6 million barrels per day.[43] Over the past decade, U.S. oil production has increased and its dependence on imports has declined, while California's in-state oil production has fallen and its dependence on foreign imports has grown, making it the highest of any state.

Once home to more than 40 refineries, California now has only six refineries capable of producing state-compliant gasoline, diesel, and jet fuels at scale. California also routinely has the highest retail gasoline prices in America and the highest state excise tax per gallon of gasoline in the U.S. Collectively, California taxes and regulatory costs attached to a gallon of gasoline will be around $1.40 to $1.42 by calendar year-end 2026. Despite affordability concerns, the California state legislature has consistently voted for higher taxes and fees to support initiatives such as its long-overdue, overbudget high-speed rail project,[44] while voting against opportunities to reduce taxes.[45] As we discuss, refineries have fled the state, and political attempts in California to appease demands for increased oil production and to reduce gasoline consumption through legislative mandates have fallen woefully short of predictions.[46] **Together, these actions, along with the stated intentions of the California Governor and Legislature, have diminished U.S. force readiness and compromised U.S. national security.**

### 4.1 California Crude Oil Reserves

California possesses incredible crude oil resources both onshore and offshore, with around **30 billion barrels of reserves available** if federal intervention enabled their development. California hosts half of the United States' top 10 oil fields by cumulative production and several super-basins, such as the Los Angeles Basin and San Joaquin Basin, which have produced over 25 billion barrels to date. By responsibly developing California's remaining reserves under federal management, California could again become a top oil-producing state, generating billions of dollars in vital income. This would further bolster the nation's energy independence by addressing the nation's weakest link, caused by California's current policy-driven overreliance on foreign oil and fuel imports, thereby strengthening U.S. national security and military readiness.

### 4.2 California Crude Oil Production

As industry operators and analysts commonly acknowledge, California's vehement hostility towards the state's oil and gas industry has had a detrimental and debilitating effect on crude producers and refiners, with many leaving the state while few are attracted to it.[47]

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[43] How much oil is consumed in the United States? - frequently asked questions (faqs) - U.S. Energy Information Administration (EIA). How much oil is consumed in the United States? - Frequently Asked Questions (FAQs) - U.S. Energy Information Administration (EIA). (n.d.). https://www.eia.gov/tools/faqs/faq.php?id=33&t=6

[44] By law, 25% of the Cap & Invest (Trade) fees is directed to the high-speed rail project. See, Cap and Trade Funding. (2021, May 19). MTC. https://mtc.ca.gov/funding/state-funding/cap-and-trade-funding

[45] See, SB 1035: The Gas Tax Relief Act | Senator Tony Strickland. (2026, April 15). Ca.Gov. https://sr36.senate.ca.gov/bill/sb-1035-gas-tax-relief-act

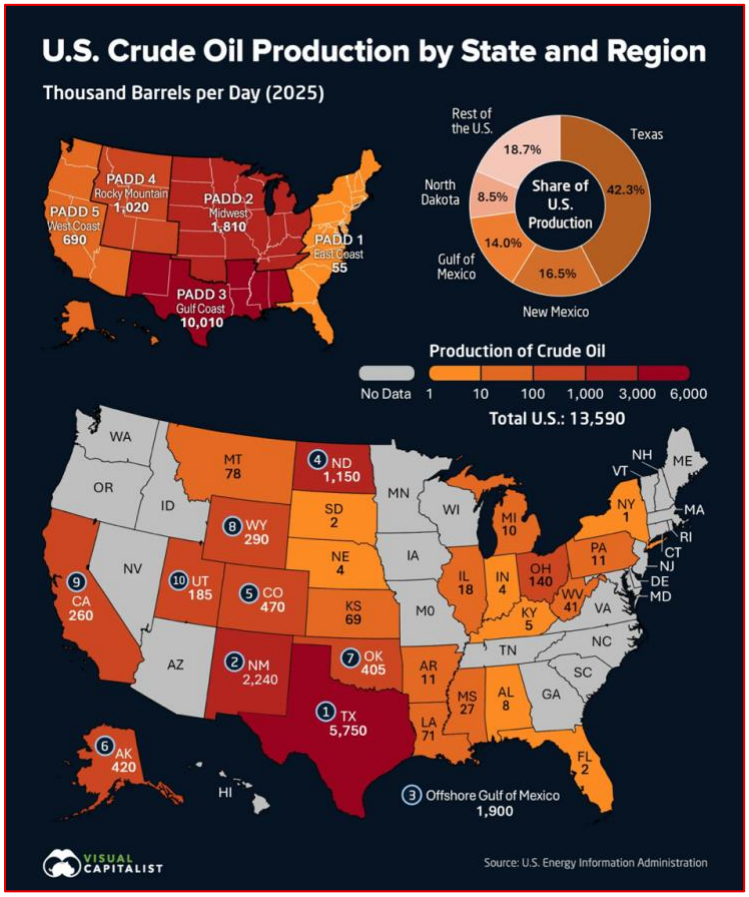
[46] Specific reference to AB 237.

[47] *FACT SHEET: California's war on American energy impoverishes residents and harms national security*. (2026, April 17). Energy.gov. https://www.energy.gov/articles/fact-sheet-californias-war-american-energy-impoverishes-residents-and-harms-national

Significantly, 20 legislative actions either prohibit or inhibit in-state crude oil production.[48] Of the 20 legislative items, 80% of them have been enacted under Governor Newsom.[49]

At one time, California led U.S. crude oil production, accounting for 40% of total U.S. crude oil output. During the 1920s, California was the world's top crude oil producer, supplying over 25% of the world's oil needs and nearly 40% of U.S. production. Over the past several decades, political pressures and regulatory costs in California have mounted, and crude oil and refinery production in the Golden State have undergone a long, tortuous decline that has accelerated sharply over the past seven years. Today, California accounts for less than 2% of total U.S. crude oil output and ranks 9th in the U.S. for crude oil production, behind states such as Texas, New Mexico, and Wyoming.[50] The figure below summarizes the 2025 crude oil production rankings by state for all 50 states.

**Figure 4.1:U.S. 2025 Crude Oil Production by State[51]**

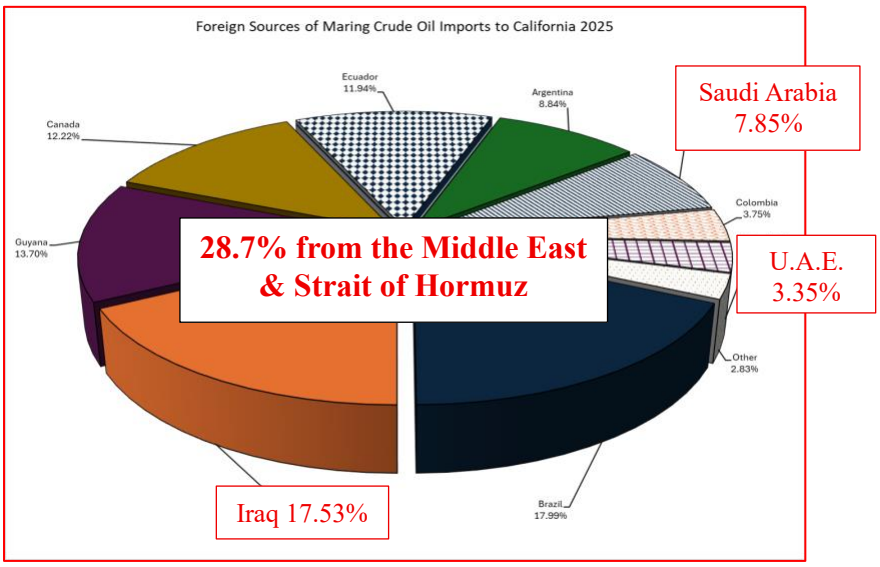



[48] See Appendix for list and descriptions of CA legislation impeding or prohibiting in-state crude production.
[49] Under Governor Gavin Newsom, since January 2019 to December 2025, California in-state crude production has dropped 39.52%. In contrast, for the 2016 to 2025, California in-state oil production declined 46.0%. See, https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/annual-oil-supply-sources-california
[50] Conte, N. (2026, July 29). Mapped: U.S. crude oil production by state and region in 2025. Visual Capitalist. https://www.visualcapitalist.com/mapped-us-crude-oil-production-by-state-2025/
[51] Conte, N. (2026, July 29). Mapped: U.S. Oil Production by State in 2025. Visual Capitalist. https://www.visualcapitalist.com/mapped-us-crude-oil-production-by-state-2025/.

Since 2005, California's crude oil imports have tripled and now account for about 62% of the oil feedstock its refineries consume.[52] California's "War on American Energy"[53] intentionally forces the state to rely on crude oil imports from petro-nations such as Iraq, Saudi Arabia, Brazil, and Ecuador, which now make up over 61% of California refinery oil sources and increase consumer and environmental costs.[54] The exhibit below depicts the various foreign sources of California oil imports for 2025.

**Figure 4.2**

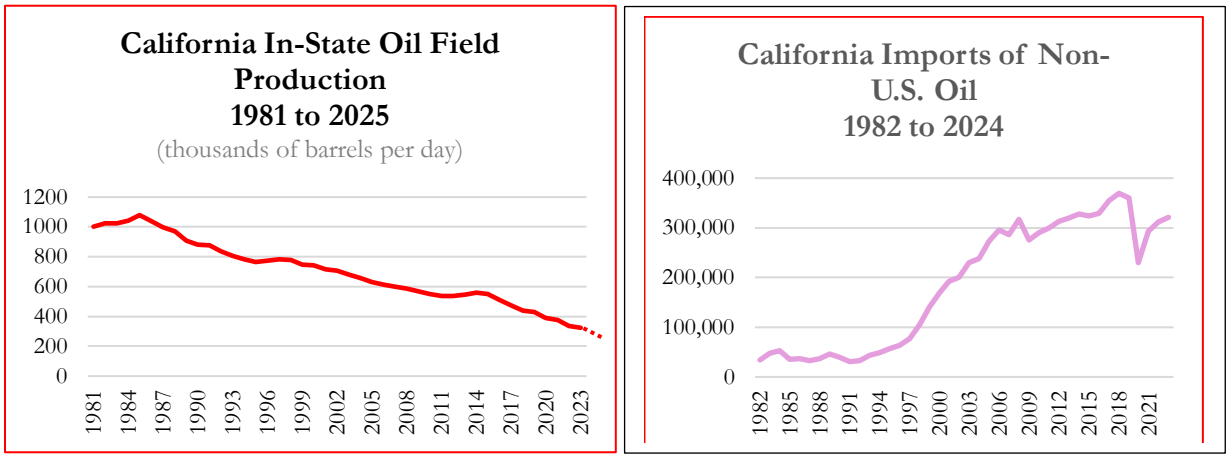
**2025 Sources of California Oil Imports**[55]




Notwithstanding the state's highly touted SB 237 legislation, new drilling permits in California plummeted by more than 90% from January 2019 to January 2026, and in-state crude oil production fell by 44%. As a result, California, America's largest state economy, is the most dependent on and most vulnerable of all 50 states to foreign crude oil producers, geopolitical events, the whims of foreign governments, and foreign-flagged maritime tankers that transport oil to California ports.

[52] California Energy Commission data.
[53] U.S. Department of Energy. (n.d.). *California's war on American energy impoverishes residents and harms national security* [Fact sheet]. Energy.gov. https://www.energy.gov/documents/fact-sheet-california
[54] Based on California Energy Commission data.
[55] Based on California Energy Commission data.

**Figure 4.3**
**California Crude Oil Production and Imports[56]**
**1981 to 2026**




As the exhibit shows, while California in-state crude oil production plummeted by 75%, imports skyrocketed by 866%, putting the state and U.S. national security at the discretion of foreign crude oil suppliers and tanker owners.[57]

### 4.3 California Refinery Output

At one time, California was home to over 40 refineries. Today, only six major refineries survive. Since 2019, under the Newsom Administration, California has lost 31% of its in-state refining capacity, with almost 16% occurring in 2025 and 2026.[58]

Crude oil has no economic or societal value unless it is refined into fuels, distillates, and byproducts. Not surprisingly, reductions in in-state production, the functional loss of an essential pipeline, and California's regulatory and extreme oversight have contributed to critical declines in refining output and the state's ability to produce fuels. As aforementioned, California had over 40 operating refineries, though today, only 6 major fuel-producing refineries remain. Two major refiners, Phillips 66 and Valero, voluntarily exited the state after legislative action. Phillips 66 announced its exit[59] within 48 hours of the passage of ABX2-1.[60] Valero followed five months later, announcing the closure of its Benicia, California, refinery.[61]

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[56] Based on CEC data.
[57] California Energy Commission. (n.d.). *Annual oil supply sources to California refineries*. Energy Almanac. https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/annual-oil-supply-sources-california
[58] Based on CEC and EIA data.
[59] Phillips 66 provides notice of its plan to cease operations at Los Angeles-area refinery. (n.d.). https://investor.phillips66.com/financial-information/news-releases/news-release-details/2024/Phillips-66-provides-notice-of-its-plan-to-cease-operations-at-Los-Angeles-area-refinery/default.aspx
[60] Udasin, S. (2024, October 14). What to know about California's controversial new law aimed at preventing gas price spikes. The Hill. https://thehill.com/policy/energy-environment/4933177-california-legislation-gas-prices/.
[61] Valero Announces Notice to the California Energy Commission Regarding its Benicia, California, Refinery. (2020). Investorvalero.Com. https://investorvalero.com/news/news-details/2025/Valero-Announces-Notice-to-the-California-Energy-Commission-Regarding-its-Benicia-California-Refinery/default.aspx

The voluntary closures of both refineries reduced refinery output, jobs, and revenue for the state, county, and cities where the refineries operated. In Valero's case, its host city, Benicia, with a population of 26,700, lost around 400 full-time jobs, 1,200 affiliated jobs, its largest utility customer, and more than 20% of its general fund budget.[62] The figure below illustrates the reduction in California refinery capacity and the surviving refinery capacity in the state for 2026.

**Figure 4.4**
**California Surviving Refinery Capacity**[63]

| 2026 SURVIVING CALIFORNIA REFINERIES | | | | |
|---|---|---|---|---|
| CA Refinery Capacity- CARBOB Fuels Only | Location | 2025 | 2026 | 2026 |
| Southern California Refineries | | Production | Production | Percent Distribution |
| Marathon Petroleum Corp., Los Angeles Refinery | Los Angeles | 365,000 | 365,000 | 27.29% |
| Chevron U.S.A. Inc., El Segundo Refinery | Los Angeles | 285,000 | 285,000 | 21.31% |
| PBF Energy, Torrance Refinery | Los Angeles | 160,000 | 160,000 | 11.96% |
| Phillips 66, Los Angeles Refinery- Closed | Los Angeles | 139,000 | 0 | 0.00% |
| Valero Energy, Wilmington Refinery | Los Angeles | 85,000 | 85,000 | 6.35% |
| **Sub-total:** | | **1,034,000** | **895,000** | **66.91%** |
| Northern California Refineries | | | | |
| Chevron U.S.A. Inc., Richmond Refinery | NorCal | 245,271 | 245,271 | 18.34% |
| PBF Energy, Martinez Refinery | NorCal | 156,400 | 156,400 | 11.69% |
| Valero Energy, Benicia Refinery- Closed | NorCal | 145,000 | 0 | 0.00% |
| Kern Energy, Bakersfield Refinery | Kern Co. | 26,000 | 26,000 | 1.94% |
| San Joaquin Refining, Bakersfield Refinery | Kern Co. | 15,000 | 15,000 | 1.12% |
| **Sub-total:** | | **587,671** | **442,671** | **33.09%** |
| **Grand Total-CA Refinery Capacity- B/D** | | **1,621,671.00** | **1,337,671.00** | **100.00%** |
| Percent **Loss** in Production- 2025 to 2026 | | | -17.51% | |

California policies have consequences. Today, California is the most dependent of all 50 states on gasoline and jet fuel from foreign sources and, for the most part, has abdicated its oil and gasoline policies to foreign powers, placing the state's economy and U.S. security at the discretion of other nations. To meet true demand, California imports approximately 250,000 barrels, or 10.5 million gallons, of liquid fuels per day, accounting for around 33% of California's fuel requirements. California also imports over one million barrels of oil per day, most of which is foreign-sourced.

A recent Jones Act waiver has enabled the importation of both finished fuels and crude oil, allowing foreign-flagged maritime tankers to transit directly between U.S. ports. Since the waiver took effect on March 17, 2026, volumes of gasoline blending stocks and jet fuel delivered to the West Coast (the majority of which went to California) exceeded the total amount shipped in the past 35 and 15 years respectively.[64] Of the 161 voyages operating under the Jones Act waiver, 30% were used to import crude oil and finished fuel products to California from March 17 to August 10, 2026. Only 3 voyages exported California products, compared with 95 and 37 from Texas and Louisiana, respectively.[65]

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[62] ECONOMIC IMPACT OF VALERO REFINERY CLOSURE CITY OF BENICIA, CA. (2025). https://www.ci.benicia.ca.us/vertical/sites/%7BF991A639-AAED-4E1A-9735-86EA195E2C8D%7D/uploads/1._Economic_Impact_of_Valero_Refinery_Closure_Report.pdf?utm_source=chatgpt.com

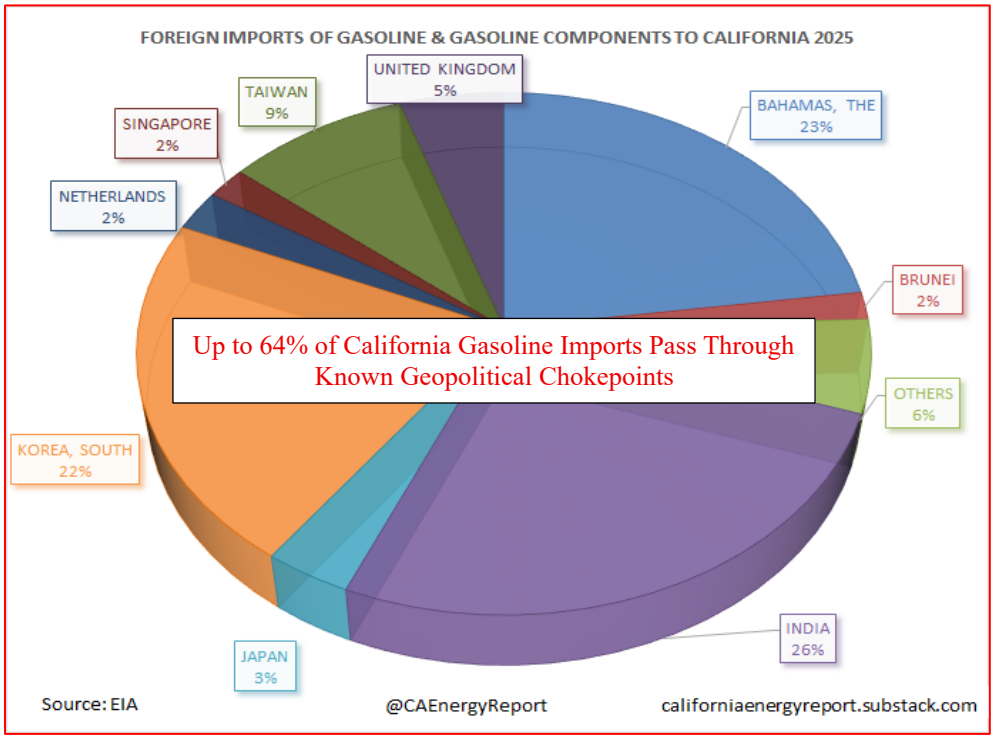
[63] Data from the CEC and EIA.

[64] Jones act waiver tracker | cato institute. (n.d.). https://www.cato.org/jones-act-waiver-tracker

[65] Jones act waiver tracker | cato institute. (n.d.). https://www.cato.org/jones-act-waiver-tracker

California's overall **imports of gasoline, jet fuel, and other refined products increased by 733%**, rising from a historical range of 3-7% to nearly 25% by year-end 2025. As shown in the figure below, about 71% of California's imported gasoline and jet fuel comes from three foreign sources: India (26%), the Bahamas (23%), and South Korea (22%). South Korea is California's largest source of imported jet fuel. The situation in Iran has exacerbated California's gasoline supply issues, further exposing the fallacy of its reliance on imports. Collectively, up to 64% of California's gasoline and jet fuel imports pass through potential "chokepoints" such as the Strait of Hormuz.

**Figure 4.5**
**2025 California Foreign Imports of Gasoline**[66]




## 4.4 California Crude Oil and Fuels Movement

### 4.4.1 Maritime

Approximately 76% or 100 million barrels a day of the world's crude oil moves via maritime tankers. About 90% of the oil that transits on tankers must pass through the Strait of Hormuz and is bound for Asian markets such as Japan, China, Singapore, and South Korea.[67] Because of its shrinking refinery capacity, California must import jet fuel from foreign sources such as South Korea. In 2025, California imported at least 20% of its jet fuel needs, including military jet fuel, from South Korea.[68] This fuel, along with gasoline and gasoline blend stocks, is

[66] Based on California Energy Commission data
[67] The Tanker Timeline: Why Energy Markets Don't Reset Overnight. (2026, June 2). American Petroleum Institute. https://www.api.org/news-policy-and-issues/news/2026/06/09/the-tanker-timeline-why-energy-markets-dont-reset-overnight
[68] The Tanker Timeline: Why Energy Markets Don't Reset Overnight. (2026, June 2). American Petroleum Institute. https://www.api.org/news-policy-and-issues/news/2026/06/09/the-tanker-timeline-why-energy-markets-dont-reset-overnight

transported to California via maritime tankers, which, from crude production in the Middle East to refining in South Korea and then arrival in California, takes 5.5 to 9 weeks. Once in California, the fuel can take another 14 to 21 days to reach its final distribution points.

Of the approximately 7,500 oil tankers in the global fleet, China owns and controls about 6%, or 450 vessels. Greece owns about 3% of the world's tanker fleet, while the U.S. has only 1.2% of all tankers.[69] China is the most aggressive nation in the world in shipbuilding. For 2026, the U.N. estimates that China will account for almost 54% of all new shipbuilding worldwide.[70] By late 2025, charter rates for a VLCC vessel exceeded $100,000 per day and reached as high as $423,000 per day for voyages involving or near chokepoints such as the Strait of Hormuz.[71]

With no inbound pipelines, nearly 100% of imported California crude oil is delivered by maritime transport, primarily by foreign-flagged VLCC tankers. Given the limited number of U.S.-owned tankers, had the President not waived the Jones Act, crude oil and gasoline supplies to California would have been much lower, and consumer prices would have been significantly higher.[72]

### 4.4.2 Pipelines

Pipeline transport of crude oil and finished products such as gasoline is the most efficient and cost-effective method. According to the U.S. Department of Transportation, pipelines are the safest way to transport petroleum products. "It would take a constant line of tanker trucks, about 750 per day, loading up and moving out every two minutes, 24 hours a day, seven days a week, to move the volume of even a modest pipeline. The railroad equivalent of this single pipeline would be a train of 225, 28,000-gallon tank cars."[73]

California has the strictest standards in the world for oil and gasoline pipeline construction, testing, environmental compliance, and maintenance. Product pipelines, which are utilized to transport refined fuels, can be configured to transport multiple fuel types, including all grades of conventional gasoline, jet fuel and kerosene, heating oils, multiple grades of California's special blend CARBOB gasoline, and ultra-low sulfur diesel fuels. Different fuels are moved through the same pipeline in large batches, with extensive "clean-outs" between batches. Because clean-outs are mandatory and essential to the safe and proper operation of the pipelines, they must be carefully scheduled and coordinated.

Although California has no inbound crude oil or gasoline pipelines, the state has an extensive network of intrastate pipelines that link oil-producing regions and maritime ports to refineries. Two major intrastate pipeline systems move San Joaquin Valley (SJV) production: (1) the primary

[69] Data Insights | UNCTAD Data Hub. (2023). Unctad.Org; UNCTAD Data Hub. https://unctadstat.unctad.org/insights/theme/107

[70] Data Insights | UNCTAD Data Hub. (2023). Unctad.Org; UNCTAD Data Hub. https://unctadstat.unctad.org/insights/theme/107

[71] Miller, G. (2026). Crude tanker rates in unchartered territory; VLCC index tops $420K. Lloyd's List. https://www.lloydslist.com/LL1156492/Crude-tanker-rates-in-unchartered-territory-VLCC-index-tops-420K

[72] Trump Administration Issues 60-Day Jones Act Waiver Amid the Iran War - Blank Rome LLP. (2026, March 25). Blank Rome LLP. https://www.blankrome.com/news-and-events/trump-administration-issues-60-day-jones-act-waiver-amid-iran-war/

[73] General Pipeline FAQs | PHMSA. (2019). Dot.Gov. https://www.phmsa.dot.gov/faqs/general-pipeline-faqs

northbound artery is the San Pablo[74] Bay (SPB) pipeline, and (2) the Plains Pipeline 2000 and PBF Line M70 pipelines, which together form the southern artery. Multiple smaller "gathering" and "feeder" pipelines connect to these two major pipelines.

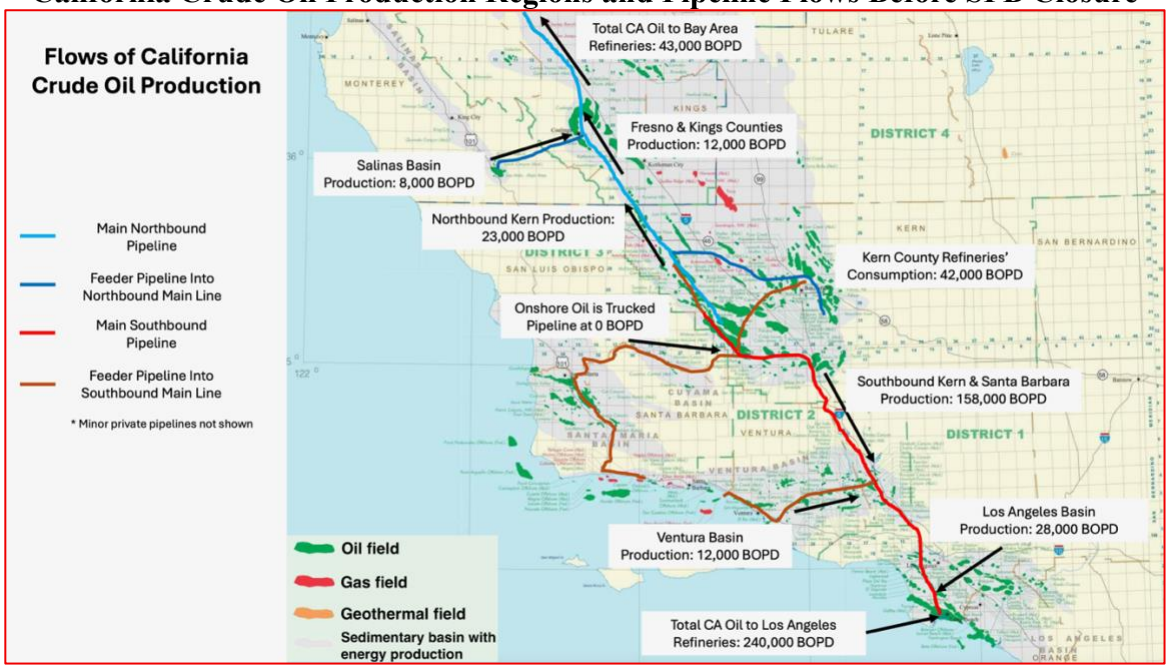
**Figure 4.6**
**California Intrastate Major Pipelines**

| CALIFORNIA PIPELINE | INTRASTATE CRUDE OIL FEEDS | | |
|---|---|---|---|
| **Pipeline** | **Pipeline Capacity (bopd)** | **Current Estimated Pipeline Capacity Utilization** | **Status** |
| **Northbound** | | | |
| San Pablo Bay (SPB) | 210,000-250,000 | **0%** | Shutdown |
| KLM | 90,000 | **0%** | Shutdown |
| Philipps 66 Line 200 | 93,000 | **0%** | Shutdown |
| **Southbound** | | | |
| Plains Line 2000 | 110,000-130,000 | 82% | Active- Stable |
| PBF M70 | 110,000 | 87% | Active- Stable |
| Plains Line 63 | 60,000 | **0%** | Partially Idled |
| Note: Combined Plains capacity is 235,000 b/d for all lines, however, Line 63 is partially out of service | | | |

As discussed, the San Pablo Bay pipeline is the only major commercial northbound line that recently fed Bay Area refineries from the San Joaquin Valley. Other northbound pipelines exist and could be rehabilitated, such as the KLM and Line 200 pipelines, but they have not been active for several years. The exhibit below illustrates crude production regions in Northern and Southern California, offshore wells in federal waters, and the related pipeline network to refineries in Northern and Southern California.

[74] In an August 10, 2026, media release, California Resource Corp. (CRC) announced that it had agreed to acquire the San Pablo Pipeline owned and operated by Crimson Midstream Holdings LLC, from CorEnergy Infrastructure Trust for $63 million bringing CRC's a combined pipeline capacity to 400,000 barrels a day. See, https://www.ogj.com/general-interest/companies/news/55396943/crc-to-acquire-crimson-midstreams-california-pipeline-platform.

**Figure 4.7**
**California Crude Oil Production Regions and Pipeline Flows Before SPB Closure**




(Source: Various & Authors)

In Northern California, the refinery and pipeline network was originally configured around crude production from Kern, Kings, Fresno, Santa Barbara, and Monterey Counties, particularly the heavy crude grades found in the San Joaquin Valley (SJV) and Santa Maria Basin. Only two large Northern California refineries producing California-compliant gasoline and jet fuel remain operational today: Chevron Richmond (which now has no pipeline connections and relies entirely on tanker imports) and PBF Martinez. The PBF Martinez and Valero Benicia refineries were supplied by the San Pablo Bay (SPB) pipeline, a subsidiary of Crimson Midstream, LLP. Notably, a dedicated pipeline connects the former Valero refinery to Travis. When it was operational, and prior to its voluntary withdrawal from Benicia, Valero supplied Travis directly with jet fuel.

The San Pablo Bay Pipeline, which is functionally inactive, is the only remaining commercial northbound crude pipeline in the state. Adjacent to the San Pablo Bay Pipeline is the idled KLM pipeline which used to transport up to 70,000-90,000 barrels of oil per day to Northern California refineries. Philipps 66 also historically operated Line 200 which transported up to 93,000 barrels per day to Northern California until 2023. Following the Valero Benicia refinery's voluntary departure, PBF Martinez will be the sole surviving Bay Area refinery with pipeline access to California-produced crude. However, PBF Martinez can also accept both maritime and pipeline crude stock, and its operations are not contingent on pipelines or reliant on the SPB pipeline.

Southern California, by contrast, has four major refineries—Chevron El Segundo, Marathon Los Angeles, PBF Torrance, and Valero Wilmington—all connected by pipeline to SJV crude. With Valero's Benicia closing, Los Angeles will have 5.7 times more pipeline-connected refining capacity than the entire Bay Area.[75]

[75] CorEnergy. (2025, November 17). *San Pablo Bay Pipeline: CPUC discussion materials* [PDF]. California Public Utilities Commission. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M593/K603/593603831.pdf

**Figure 4.8**[76]
**Refineries and Pipelines- Typical Allocations**

| MAJOR CALIFORNIA CARBOB REFINERIES AND PIPELINES | | | |
|---|---|---|---|
| **CALIFORNIA REFINERY** | **INTRASTATE CRUDE OIL FEEDS** | | |
| **Northen California** | **Pipeline** | **Pipeline Capacity (bopd)** | **Maritime- 100%** |
| Chevron- Richmond | NA | NA | Maritime- 100% |
| PBF Marathon- Martinez | San Pablo Bay | 210,000-250,000+ | Maritime |
| **Southern California** | | | |
| Chevron- El Segundo | Plains- 2000 | 110,000-130,000 | Maritime |
| PBF - Torrance | M70 | 110,000 | Maritime |
| Valero- Willington | Plains- 2000 | 110,000-130,000 | Maritime |
| Marathon- LA | Plains- 2000 | 110,000-130,000 | Maritime- Limited |
| Note: Combined Plains capacity is 235,000 b/d for all lines. | | | |

### 4.4.3 Western Gateway Pipeline

Phillips 66, HF Sinclair, and Kinder Morgan have announced their joint venture to build the Western Gateway Pipeline (WGP).[77] The WGP is dedicated to finished fuels, such as gasoline, has a published capacity of 230,000 barrels a day, and connects seven refineries located in 5 states, with a collective production capacity of 885,000 barrels a day.

The WGP begins in Missouri and runs about 1,300 miles, of which 900 miles are new construction. Notably, the new construction sections occur in Texas, Oklahoma, and Arizona, with no new construction in California. In California, the joint venture parties intend to reverse the flow of the existing Kinder Morgan west-to-east SFPP line that connects California refineries to Arizona, creating an east-to-west product flow. Reversing the SFPP line would use the existing line footprint and path but would require substantial reengineering of flows, pump stations, flowmeters, bypass construction, and exhaustive testing before receiving certification from multiple state and federal agencies.

According to the joint venture partners, about 125,000 barrels a day of the 230,000 barrels a day are allocated to Arizona. Some product will flow to Nevada, leaving California with approximately 55,000 to 100,000 barrels of finished product, significantly lower than the combined losses from the Phillips 66 and Valero refinery closures. Despite the development, significant issues and hurdles remain:

i. Fuel entering California must comply with California's special blend formula as defined by the California Air Resources Board (CARB).

ii. The pipeline does little to benefit California crude oil producers and refiners.

[76] Based on published refinery and California Energy Commission data.
[77] westerngatewaypipeline.com. (2026). westerngatewaypipeline.com. Westerngatewaypipeline.Com. https://westerngatewaypipeline.com/project-details

iii. The amount of fuel entering the California market is less than 13% of daily consumption and therefore will have only minimal or no material impact on consumer prices.

iv. The estimated completion date is 2029, which is ambitious. As is well documented in California, particularly in the recent Sable cases, pipelines are highly contentious, and even retrofits, such as Sable Offshore's use of federally permitted existing pipelines, attract litigation and environmental activism.[78] [79]

Despite these issues and hurdles, California would significantly benefit from an east-to-west pipeline that supplies fuel to the state. When fully operational, the WGP will provide fuel to U.S. military assets in Arizona and, to a lesser extent, in California, and will serve as sorely needed redundancy for the military fuel infrastructure.

[78] Aron, H. (2026, June 17). Appeals court upholds injunction against oil pipeline repairs — even though repairs are complete. Courthouse News Service. https://courthousenews.com/appeals-court-upholds-injunction-against-oil-pipeline-repairs-even-though-repairs-are-complete/

[79] Mills, T. (2026, July 20). California Sues Trump Administration Over Sable Pipeline Permit. *BLaw.* https://news.bloomberglaw.com/environment-and-energy/california-sues-to-stop-interstate-designation-of-sable-pipeline

## 5.0 CALIFORNIA AND U.S. MILITARY READINESS

### 5.1 California Military Presence

California's military installations serve as the vanguard of U.S. forces, facing potential nuclear adversaries such as North Korea, Russia, and the People's Republic of China (PRC), as well as transnational terrorist organizations in the Philippines, Malaysia, and the Middle East. California-based military forces fall under the command of U.S. Pacific Command (PACOM)[80] and can provide lethal forces, at strength and scale, as needed, anywhere in the world within 72 hours…assuming, of course, that those forces have sufficient fuel to reach the designated theaters and the threats to sustain continuous war operations. To help put the U.S. commitment to the Asia-Pacific Theater and California's role in perspective, two of the largest U.S. military installations are in Japan and South Korea. Except for current conditions, total U.S. troop strength in the Asia-Pacific Command deployed to Japan and South Korea outnumbers that of Europe.

In 2023, California received $60.8 billion in defense spending and is home to more than 30 major U.S. military installations, including the Pacific Fleet based in San Diego, Alameda, and Point Loma; the United States Marine Corps stationed at Camp Pendleton, Twenty-Nine Palms, Miramar, and Barstow; U.S. Coast Guard stations located inland and along the state's 840-mile coastline; U.S. Air Force bases, including Beale, Los Angeles, Edwards, and Travis; missile bases such as Vandenberg; and the U.S. Navy Postgraduate College in Monterey. Edwards Air Force Base is home to the B-1 Lancer supersonic bomber and the KC-46 Pegasus tanker aircraft. Camp Roberts, located on the central coast, is home to the California National Guard and serves as a staging point for U.S. Army and Marine Corps Reserve mobilization, as well as a training site for armor, infantry, and artillery. Figure 5.1 below lists some of the military installations in California.

**Figure 5.1**
**List of Selected California Military Installations- 2026**[81]

| |
|---|
| Beale Air Force Base |
| Channel Islands Air National Guard Base |
| Edwards Air Force Base |
| Fresno Air National Guard Base |
| Los Angeles Air Force Base |
| March Air Force Base |
| Travis Air Force Base |
| Vandenberg Air Force Base |
| Camp Parks |
| Camp Roberts |
| Camp San Luis Obispo |
| Fort Hunter Liggett |

[80] *Department of War restores U.S. Pacific Command designation*. U.S. Pacific Command. (n.d.). https://www.pacom.mil/Media/Press-Releases-and-Readouts/Article/4519249/department-of-war-restores-us-pacific-command-designation/

[81] E., J. (2024, June 20). 5 Military Bases in Alabama (Updated List For 2026). Operation Military Kids. https://www.operationmilitarykids.org/military-bases-in

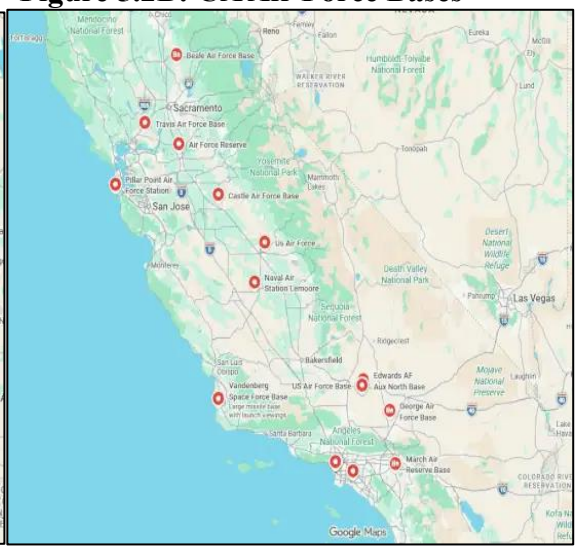
| |
|---|
| Fort Irwin |
| Presidio of Monterey |
| Sierra Army Depot |
| Navy Air Facility El Centro |
| Naval Air Station Lemoore |
| Naval Air Weapons Station China Lake |
| Naval Base Coronado |
| Naval Base Point Loma |
| Naval Base San Diego |
| Naval Base Ventura County |
| Naval Support Activity Monterey |
| Naval Weapons Station Seal Branch |
| Camp Pendleton |
| Marine Corps Logistics Base Barstow |
| Marine Corps Air Station Miramar |
| Twentynine Palms Marine Corps Air Combat Center |
| Integrated Support Command Alameda |
| Training Center Petaluma Coast Guard Base |
| Joint Forces Training Base – Los Alamitos |

## 5.2 Fuel Supply and Consumption of California Military Installations

The exhibits below partially illustrate the locations of California Army and Air Force Bases.

**Figure 5.2A: CA Army Bases**


**Figure 5.2B: CA Air Force Bases**




California's refineries and pipelines supply fuel to U.S. bases within the state and to bases in Arizona and Nevada. The figure below summarizes fuel types and approximate usage volumes for selected California military installations.

**Figure 5.3**
**Example of California Fuel Supplies to Western U.S. Military Installations**
(Partial List Only)

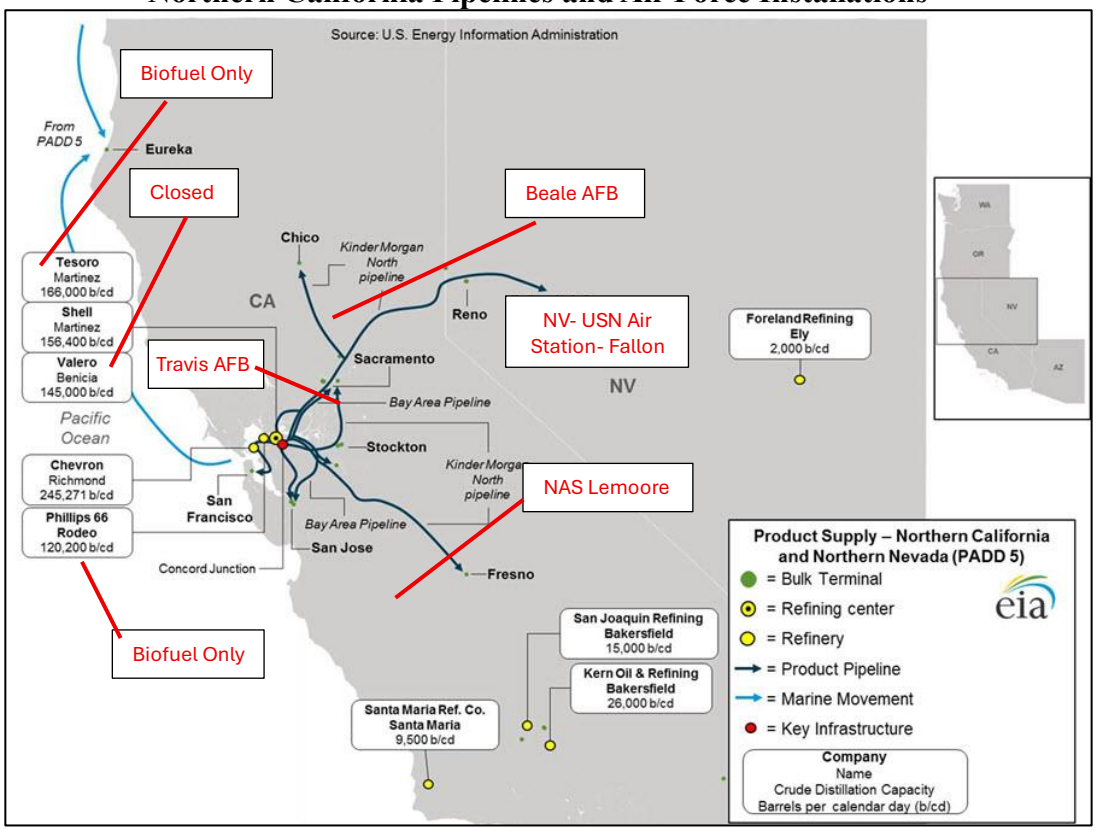
| Major Installation | State | Active-Duty Personnel | Civilian / Contractor Personnel | Approx. Fuel Use (gal/day, peacetime) | Primary Supply Source |
|---|---|---|---|---|---|
| Edwards AFB | CA | ~8,000 | ~2,000 | ~250,000 JP-8 | Local refineries / Watson Station |
| NAS Lemoore | CA | ~7,000 | ~1,300 | ~180,000 JP-5 / JP-8 | Fresno spur pipeline |
| Camp Pendleton | CA | ~38,000 | ~1,200 | ~400,000 Diesel / JP-8 | SoCal refineries |
| Nellis AFB | NV | ~10,000 | ~3,500 | ~500,000 JP-8 | CalNev pipeline |
| Luke AFB | AZ | ~5,500 | ~2,000 | ~300,000 JP-8 | SFPP East Line |
| Naval Base San Diego | CA | ~20,000 | ~10,000 | ~600,000 F-76 / JP-5 | El Segundo / Watson Station |
| Travis AFB | CA | ~6,600 | ~2,600 | ~160,000 JP-8 | Bay Area refineries / Richmond Wharf |

Intrastate and interstate pipelines transport refined fuel products from California refineries and distribution points to U.S. military installations. When pipelines are unavailable, tanker trucks are used for short periods. On average, a tanker truck transports about 9,000 gallons of fuel. Using Travis AFB as an example, around 23 trucks a day would be required to replenish a single day of fuel consumption. Six tanker trucks would be required to refuel a single B-52 mission.

As previously mentioned, only two large Northern California refineries remain operational today: Chevron Richmond (which currently has no pipeline connections and relies entirely on tanker imports) and PBF Martinez, which can accept both pipeline and maritime crude shipments.[82] Notably, the recently closed Valero Refinery in Benicia was the only refinery in California with a direct pipeline to Travis Air Force Base. Valero-Benicia produced about 600,000 gallons of jet fuel daily, of which 160,000 to 200,000 gallons were consumed by Travis AFB under routine operating conditions.

[82] Note, we omit Phillips 66 Rodeo complex in the SF Bay area as it was converted to a renewable fuel refinery in 2026 with a capacity of 50,000 barrels a day.

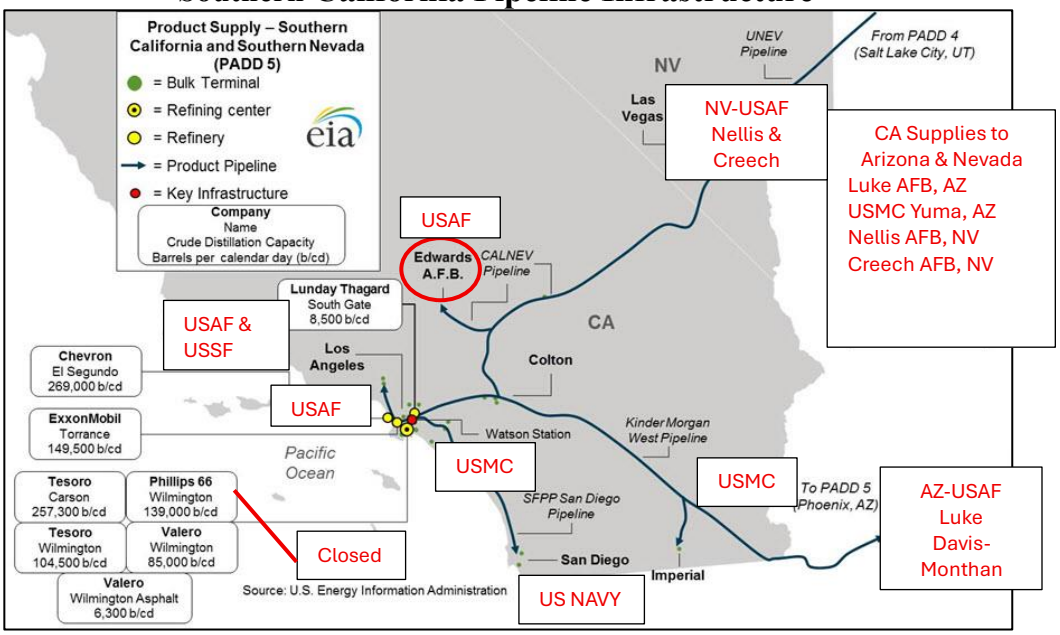
**Figure 5.4**
**Northern California Pipelines and Air Force Installations**[83]




Southern California, by contrast, has four major refineries—Chevron El Segundo, Marathon Los Angeles, PBF Torrance, and Valero Wilmington—all connected by pipeline to SJV, Santa Barbara, Ventura, and Los Angeles Basin crude oil streams. With Valero's Benicia plant closing, Los Angeles will have 5.7 times more pipeline-connected refining capacity than the entire San Francisco Bay Area. This structural imbalance, together with refinery economics, strongly incentivizes Central Valley producers to ship crude south, where the market is larger, more competitive, and more flexible. This leaves Northern California completely reliant on imported crude oil and fuels as no in-state production is being shipped directly via pipeline any longer.

[83] EIA data

**Figure 5.5**
**Southern California Pipeline Infrastructure**[84]




## 5.3 United States Military: Mission and Strength

The U.S. military's stated mission is "to provide the military forces needed to deter war and ensure our nation's security." The U.S. military also works to "promote development, enhance security, deter aggression, and provide humanitarian assistance." America's military predates the Revolutionary War, with Congress formally organizing the U.S. Army by an Act of Congress in 1775, followed by the Navy in 1776. The U.S. Space Corps is the most recent addition to the U.S. military and was established in 2018. Overall command authority for all U.S. military forces is vested in the President of the United States (POTUS), who is constitutionally endowed with that power under Article II, Section 2, Clause 1 of the U.S. Constitution[85] as "Commander in Chief." Operational command of all military branches, except the U.S. Coast Guard,[86] is under the direction of the Department of War (DoW), led by Secretary Pete Hegseth.

Since 1945, U.S. military doctrine has been grounded in deterrence and "Peace Through Strength." U.S. war planning is a complex theory of 1.5 fighting, involving the sophisticated and highly integrated Joint Planning (JP 5-0) approach. During the Cold War, U.S. military plans provided for the nation to sustain and win two major and one minor military conflict simultaneously. The Vietnam War reflected the strategy of limited containment warfare, advocated by General Maxwell Taylor.[87] U.S. military operations in Afghanistan largely reflected the Wolfowitz Doctrine[88] and

[84]West Coast Transportation Fuels Markets - Energy Information Administration. (2025). Eia.Gov. https://www.eia.gov/analysis/transportationfuels/padd5/
[85]Constitution Annotated. (n.d.). Presidential Power and the Commander-in-Chief Clause | Constitution Annotated | Congress.gov | Library of Congress. Constitution.Congress.Gov. Retrieved September 2, 2026, from https://constitution.congress.gov/browse/essay/artII-S2-C1-1-11/ALDE_00013473/
[86] Command authority for the U.S. Coast Guard is vested with the Secretary of Homeland Security. However, under war conditions, command authorly may shift to POTUS.
[87] TIME. (1961, July 28). The Cold War: Chief of Staff. TIME; Time. https://time.com/archive/6871237/the-cold-war-chief-of-staff/
[88] https://nsarchive2.gwu.edu/nukevault/ebb245/doc03_full.pdf

resulting asymmetrical warfare strategies. However, with the demise of the Soviet Union as a superpower, U.S. war planning shifted to 1.5 war planning, meaning the U.S. could fight and win a major and a minor conflict. With the ascent of China, together with the proliferation of nuclear weapons and Congressional budget conflicts, U.S. war planning now focuses on 1.0 principles, involving the use of force against single or regional threats.[89]

U.S. war planning serves two essential purposes: 1) to provide POTUS with the best military advice necessary to address U.S. interests and 2) to provide the framework for operationalizing POTUS's commands. The U.S. approach encompasses all aspects of war and battle planning, including assessing strategic, theater, and functional campaigns, as well as logistical coordination to sustain operations. The U.S. military operated with a budget of $997 billion for FY 2025/2026; however, POTUS is seeking a budget increase to $1.5 trillion for FY 2026/2027.[90] Current U.S. war planning under President Trump has, among its many objectives, four critical priorities:[91]

1. Secure and defend the U.S. homeland's borders, skies, ports, and interests from all threats and enemies.
2. Accelerate the rebuilding of the national defense industrial base and defense production capability and increase America's weapons stockpiles.
3. Increase U.S. Allies and Partners' financial cost sharing and personnel and material contributions.
4. Deter Chinese aggression through military strength and political resolve.

The United States military is the best-equipped, best-trained, most professional, and most lethal fighting force in the world. Although other militaries may be larger, none are better. Among immediate rivals and potential threats, the U.S. ranks third in troop strength behind China and India, while North Korea and Russia maintain the fourth- and fifth-largest armies. U.S. military personnel are dispersed across six service branches: Air Force, Army, Coast Guard, Marines, Navy, and Space Force. The U.S. military is organized into 11 combatant commands, some of which are based in and/or supplied from California.

Logistical operations for the DoW fall under the Defense Logistics Agency (DLA). The DLA oversees and manages the U.S. global end-to-end supply chain for all materials, including fuels. The DLA ensures that the necessary resources, materials, personnel, and fuels are available to America's warriors. Through its Energy sub-unit, the DLA sources, secures, procures, and delivers petroleum products and jet fuels such as JP-8 and JP-5 to U.S. military forces. Specific logistics for in-theater operations and capabilities are part of Theater Logistics Analysis (TLA). As of early 2026, the U.S. military had approximately 2.81 million members, including around 2.10 million

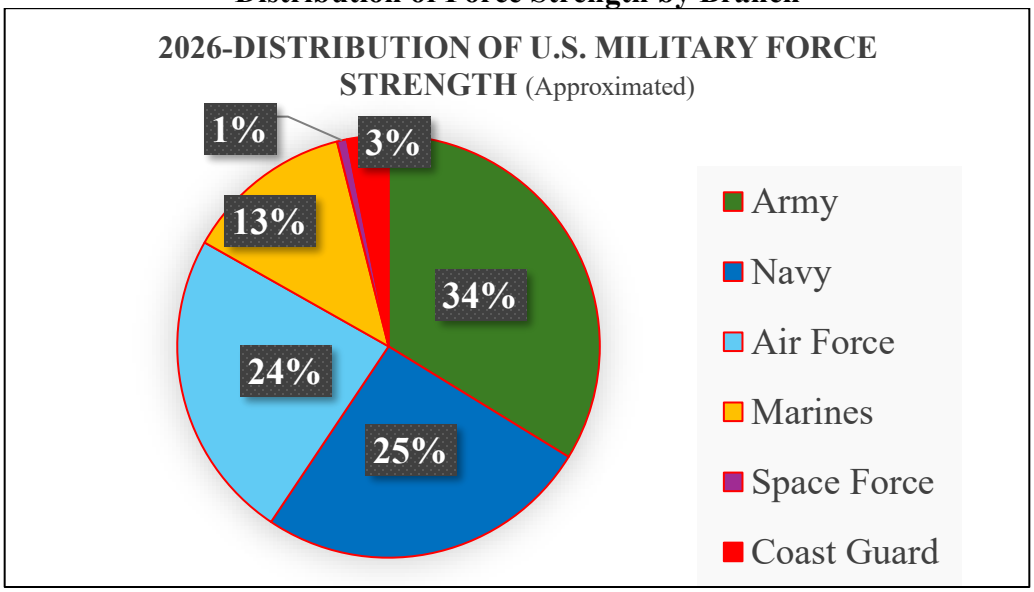
[89] Hal Brands, E. B. M. (2020, March). One War Is Not Enough: Strategy and Force Planning for Great Power Competition | American Enterprise Institute - AEI. American Enterprise Institute - AEI. https://www.aei.org/commentary/one-war-is-not-enough-strategy-and-force-planning-for-great-power-competition/

[90] Costas Pitas, & Shalal, A. (2026, January 8). Trump calls for $1.5 trillion military budget in 2027, up from $901 bln in 2026. Reuters. https://www.reuters.com/world/us/trump-says-us-military-budget-2027-should-be-15-trillion-2026-01-07/

[91] UNCLASSIFIED UNCLASSIFIED. (n.d.). Retrieved September 2, 2026, from https://media.defense.gov/2026/Jan/23/2003864773/-1/-1/0/2026-NATIONAL-DEFENSE-STRATEGY.PDF

military personnel and 715,212 civilians. Of the 2.10 million military personnel, 1.33 million are active-duty, and around 770,118 are National Guard members or reservists.

**Figure 5.6**
**Distribution of Force Strength by Branch**




## 5.4 Overview of Combat Assets[92]

### 5.4.1 United States Air Force

The U.S. Air Force maintains over 5,000 aircraft, including the B-1, B-2, and B-52 strategic bombers and F-35, F-16, F-22, F-15, and A-10 aircraft, as well as tankers, transports, and specialized aircraft. Understandably, the United States Air Force is the largest consumer of fuel in the U.S. military. For 2025, it is estimated that the USAF consumed 47.6 million barrels, or approximately 2 billion gallons, of liquid fuels and accounted for 51% of all U.S. combat forces' liquid fuels consumption. A single B-1 supersonic bomber can consume 70 pounds of fuel per second and upwards of 250,000 pounds, or 37,000 gallons, per hour. A B-2 bomber, the primary weapons delivery platform deployed in Operation Midnight Hammer,[93] consumes around 3,300 gallons, or 79 barrels, per hour of operation. Around 125 U.S. military aircraft were involved in Operation Midnight Hammer. A single B-52, a long-time bastion of U.S. bombers, can consume 40,000 to 45,000 gallons of jet fuel, or 1,100 barrels, on a single mission. Almost all U.S. Air Force aircraft use JP-8 jet fuel.

To supply its combat air wings, the U.S. Air Force operates the Air Mobility Command (AMC). The AMC rapidly deploys combat materiel and aerial refueling assets and delivers humanitarian aid anywhere in the world within hours. According to its website, "[the] command operates the C-5 Galaxy, KC-10 Extender, KC-46A Pegasus, C-17 Globemaster III, C-130 Hercules, C-130J Super Hercules, and KC-135 Stratotanker. Operational support aircraft are the VC-25 (Air Force One), C-20, C-21, C-32, C-37, and C-40." A single C-5 Galaxy transport plane

[92] Basic overview only. For purposes of this analysis, U.S. Nuclear Forces, USCG and USSF, are omitted.
[93] Defense Agency Contributed Toward Operation Midnight Hammer Success. (2025). U.S. Department of War. https://www.war.gov/News/News-Stories/Article/Article/4240876/defense-agency-contributed-toward-operation-midnight-hammer-success/

can carry up to 51,000 gallons of jet fuel; one KC-10 Extender mid-air refueling plane can take on 54,000 gallons; and the C-17 Globemaster has capacity for 35,000 gallons. These planes are routinely used in aerial refueling, especially over vast distances, as in the Pacific Theater, and are essential to any actions involving China, Taiwan, South Korea, and North Korea. Some of AMC's air assets are assigned to Travis Air Force Base, California, a primary West Coast installation hub. Additional West Coast capabilities are associated with Washington state and Pearl Harbor.

### 5.4.2 United States Navy and USMC

The U.S. Navy accounts for about 33% of all combat branch liquid fuel consumption. The U.S. Navy has about 300 battle force surface ships in its fleet, including 11 aircraft carriers from the Ford, Reagan, and Bush supercarrier classes. By comparison, China, America's main Asian threat and potential adversary for control of the Strait of Taiwan, the Sea of Japan, the South China Sea, the West Philippine Sea, and the Strait of Malacca, maintains a fleet of nearly 400 surface and subsurface battle force vessels and plans to have as many as 9 carriers.

The U.S. has the world's largest and most formidable naval assets. A single Carrier Strike Group (formerly Carrier Battle Group) has more combat power than most nations and can reach virtually any target anywhere in the world. The Navy's largest fuel consumption is diesel and jet fuel, followed by gasoline. U.S. carriers are composed of a Carrier Air Wing (CVW) encompassing Naval and Marine Strike Force Squadrons (VFA). A single U.S. carrier typically has 60 to 70 aircraft assigned to it, organized into 9 squadrons, and maintains 88,000 to 91,000 barrels (average of 3.8 million gallons) of JP-5 jet fuel. A U.S. supercarrier is composed of 4 squadrons of FA-18E/F and F-35C attack aircraft, and one squadron each of EA-18 Growlers, CMV-22B Ospreys, E-2D Hawkeyes, and MH-60 Seahawks. Aviation JP-5 fuel consumption is high. A single F-35C can burn as much as 260 gallons per minute on afterburner and between 1,350 and almost 1,500 gallons per hour at cruising speed and altitude. The F/A-18E/F Super Hornet consumes around 1,200 gallons per hour.

Maintaining fleet and war readiness requires substantial fuel and highly sophisticated logistics planning. An F-18 carrier-based air wing can consume more than 800,000 gallons (19,050 barrels) per day in combat conditions. Multiple air wing operations, as would be involved in any kinetic actions involving the Strait of Taiwan, the Sea of Japan, or the South China Sea, could easily consume 80,000 to 100,000 barrels of jet fuel per day. Additionally, the USMC's Aviation Combat Wing operates a range of attack, transport, and utility aircraft. Most visible are the USMC's F-35, a fifth-generation stealth fighter; the AH-1Z Viper attack helicopter; and the venerable MV-22B Osprey assault helicopter. The USMC also deploys CH-53E and CH-53K Stallion-class heavy helicopters and KC-130J aircraft for aerial refueling, transport, and logistics support. USMC aviation assets are designed to deliver maximum assault and lethal "first strike" capabilities anytime and anywhere in the world.

Located in Kings and Fresno Counties, U.S. Naval Air Station Lemoore (NAS Lemoore) is the Navy's largest master jet base. Commissioned in July 1961, NAS Lemoore is home to Commander Strike Fighter Wing and houses more than 50% of the Navy's F/A-18F Super Hornet fighters, as well as F-35C Lightning fighters. According to the U.S. Navy, "NAS Lemoore hosts 16 operational Strike Fighter squadrons, two Fleet Replacement squadrons and one Search and Rescue squadron and four west coast Carrier Air Wing Commands and staff. On average, 210,000

flight operations occur annually."[94] Roughly 600 flights are conducted daily. NAS Lemoore operates three surface JP-5 fuel storage tanks totaling around 4.5 million gallons. NAS Lemoore is connected to a small, 10,000-barrels-per-day "spur" pipeline terminal in Fresno with no redundancy. NAVSUP-FLC has operational responsibilities for Naval fuels and is under the command of Naval Supply Command, headquartered in Mechanicsburg, VA.

America's fighting fleet is supplied by approximately 28 to 30 fuel replenishment tankers of various classes and designations (military and civilian) as part of the Tanker Security Program (TSC). The U.S. Navy also operates the Military Sealift Command (MSC), which is responsible for maritime transport. Composed of 18 Kaiser-class[95] fleet replenishment tankers, these tankers carry around 180,000 barrels of fuel (7.5 million gallons) and can achieve about 20 knots per hour. In addition, the U.S. Navy began replacing the older Kaiser-class tankers with the newer John Lewis-class tankers with a slightly smaller fuel storage capacity of 156,000 barrels.[96] The MSC operates a variety of vessels, including cargo ships, mine countermeasure ships, submarine tenders, and underway replenishment oilers (T-AO) that supply Navy vessels with fuel and jet fuel while deployed at sea. In a moderate-to-large-scale conflict in the Western Pacific region, virtually all U.S. tankers would be pressed into service, but the source of their oil and fuel is essential.

### 5.4.3 United States Army

The U.S. Army consumes 10% of combat force liquid fuels. America's Army has between 4,600 and 5,000 M1 Abrams main battle tanks, the most formidable battlefield weapon in the world. Weighing 68 tons, the M1A2 is the most formidable tank in the world and can exceed 40 mph. The M1 is powered by a 1,500-horsepower turbine engine and uses JP-8 jet fuel as its preferred fuel, though it can also operate on other fuels. In addition, the U.S. military has thousands of other military and combat vehicles, such as the M2 Bradley and the new M10 Booker assault vehicles. The M2 Bradley uses JP-8 jet fuel, while the new M10 uses standard military-grade diesel fuel in its 800-horsepower engine. A single armored division can easily consume 600,000 gallons per day.

The U.S. Army's Army Aviation Branch operates a range of airborne combat, reconnaissance, training, transport, and logistics aircraft. Most recognized are the AH-64 Apache attack, the UH-60 Black Hawk assault and support, the CH-47 Chinook heavy, and various MEDEVAC-configured helicopters. These brigade-sized assets can deliver significant American firepower and materiel, as well as lethal fighting forces, with pinpoint accuracy and in a highly concentrated, rapid manner.

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[94] U.S. Navy, Commander, Navy Region Southwest. (n.d.). *About: NAS Lemoore*. https://cnrsw.cnic.navy.mil/Installations/NAS-Lemoore/About/

[95] Estimate only.

[96] The John Lewis-class has a capacity of 156,000 barrels or 6.55 million gallons of fuel. There are an estimated 6 John Lewis class tankers in active service. See, Wikipedia contributors. (2026, July 20). *John Lewis-class replenishment oiler*. Wikipedia. https://en.wikipedia.org/wiki/John_Lewis-class_replenishment_oiler

## 6.0 THE NEED FOR A RAPID RESPONSE FUEL RESERVE

### 6.1 Observations

Based on the preponderance of data and extensive analysis, our fundamental conclusion is that California's regulatory policies, along with high compliance and operating costs, have diminished its capacity to produce crude oil and refine it into finished fuels, thereby compromising U.S. national security. Common-sense reasoning has led to several specific observations:

i. U.S. forward fuel reserves and depots, such as those in Guam, Diego Garcia, and the Philippines, are within missile range of potential adversaries, making those installations nonviable as refueling points for America's carriers in a conflict with China.[97]

ii. California has abundant, proven, and accessible crude oil reserves that can be used to produce more oil, reducing its exposure to geopolitical events and insulating it from supply-chain disruptions associated with the Middle East, the Strait of Hormuz, and the Bab al-Mandeb Strait.

iii. California has insufficient refining capacity, forcing it and the nation to rely on fuel imports from South Korea, India, and Japan, all of which would be compromised in a conflict in the western Pacific.[98]

iv. To meet its military and broader civilian needs, California would benefit from a Rapid Response Fuels Reserve (RRFR) for crude oil and finished fuels. Initial estimates for the RRFR are **23 to 53 million barrels of crude oil** and **961 million to 2.2 billion gallons of fuel.**

v. Creating the RRFR will require investment in new and expanded crude production, new storage tank farms for oil and fuel, new pipelines, upgrades to existing pipelines, and, significantly, additional new or recovered in-state refinery capacity, with Nevada a viable site for new refinery investment.

### 6.2 Defense Fuel Logistics and Consumption

From ancient times to today, logistics has been essential to any war strategy and warfighting capability.[99] In World War II, the U.S. used a massive armada of vessels to move troops, materials, and fuel globally to support major kinetic operations on two fronts.[100] California oil production and refined fuels played a major role in World War II.[101] Subsequently, throughout the 20th century and well into the 21st, U.S. war planning for the Pacific Theater assumed that

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[97] Bussey, E., & Bussey, E. (2026, August 17). *Iran war thrusts Diego Garcia into spotlight as official calls US military base 'integral.'* Fox News. https://www.foxnews.com/world/iran-war-thrusts-diego-garcia-spotlight-official-calls-us-military-base-integral

[98] The planned Western Gateway Pipeline project will help boost fuel supplies to California, but it is insufficient on its own to support military fuel surging at scale given its allocations to Arizona and Nevada.

[99] Roth, J. (1999). *The Logistics of the Roman Army at War (264 B.C. - A.D.235)*. https://doi.org/10.1163/9789004236325. See also *Bryn Mawr Classical Review*. (n.d.). https://bmcr.brynmawr.edu/1999/1999.11.01/

[100] Sustaining the fight - resilient maritime logistics for a new era. (n.d.). https://csbaonline.org/uploads/documents/Resilient_Maritime_Logistics.pdf

[101] Budge, K. G. (n.d.). *The Pacific War Online Encyclopedia: Oil*. http://pwencycl.kgbudge.com/O/i/Oil.htm

California would have sufficient crude production and refinery capacity to support extensive, protracted operations, relying on a five-tier approach:

i. Storing fuel at strategic locations across the Pacific.
ii. Relying on California crude oil and refinery production to surge fuel stocks to the fleet and air bases.
iii. Airlifting fuel to storage facilities and forward fuel bunkers (depots).
iv. Replenishing at sea and at storage facilities and forward fuel bunkers via tanker vessels.
v. Air refueling of aircraft.

Given that California forms the nation's western edge facing China, it would be logical to assume it serves as the central node for military fueling operations. That 20th-century strategy made sense…when California was a leading oil and refining state. However, in the 21st century, California's policies and regulations have dissuaded investment, reduced in-state oil production and refinery capacity, and increased reliance on imported crude oil from the Middle East and on gasoline and jet fuels from India and South Korea. As the California Energy Commission Vice Chairman stated, **"We (California) are predominantly an import state for crude oil,"** rendering previous military fuel planning assumptions obsolete and making reliance on California risky for the nation.

California has no significant crude oil or finished fuel reserves and no direct pipeline access to fuel stored in the SPR. According to a February 2026 EIA forecast, the total volume of jet fuel in the U.S. represented about 21 days' supply, the lowest since 1963.[102] California jet fuel inventories, which rely on an armada of foreign-owned tankers, dropped to just 2.6 million barrels,[103] forcing some commercial carriers, such as Southwest Airlines, to charter tankers independently to secure supplies[104] and prompting others, such as American and United Airlines, to suspend routes.[105] California has, for the past decade, always led the nation with high retail gasoline, diesel, and jet fuel prices…after all, it has its own state-mandated "special blend" of gasoline. In California, it is fashionable for politicians to deflect and blame the White House for high prices and refinery exits.[106] The reality is that California's loss of in-state crude oil production and refinery capacity has nothing to do with the White House or any action by Washington, D.C. It is entirely self-engineered and created. Since 2019, California has "lost" around 610,000 barrels a day, or about 32% of in-state refinery capacity, as refiners voluntarily exit the state or convert to other fuels, forcing it to rely on imports.

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[102] *Weekly petroleum status report - U.S. energy information administration (EIA)*. Weekly Petroleum Status Report - U.S. Energy Information Administration (EIA). (n.d.). https://www.eia.gov/petroleum/supply/weekly/

[103] Petrow-Cohen, C. (2026, April 24). California's jet fuel stockpile hits two-year low, putting "black cloud" over summer travel. *AOL.com*. https://www.aol.com/articles/californias-jet-fuel-stockpile-hits-100000000.html

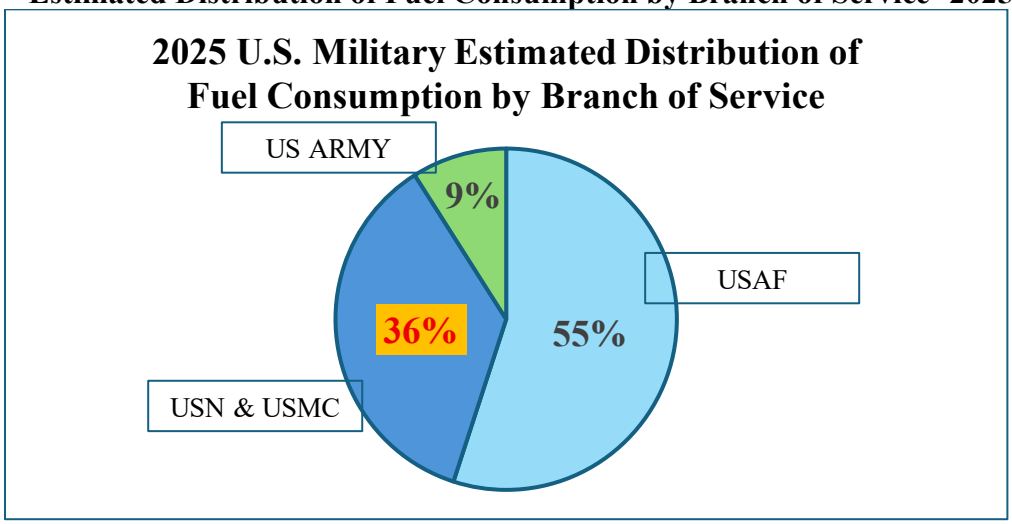
[104] Josephs, L. (2026b, July 23). *Southwest Airlines put Texas jet fuel on a boat to LA for the first time amid supply worries*. CNBC. https://www.cnbc.com/2026/07/23/southwest-shipped-jet-fuel-from-texas-to-california-amid-supply-crunch.html

[105] Cerullo, M. (2026b, June 5). *American Airlines suspends 6 routes because of high jet fuel costs*. CBS News. https://www.cbsnews.com/news/american-airlines-california-route-cuts-jet-fuel-iran-war/

[106] Anthonymartinez. (2026, March 10). *Governor Newsom blasts Trump for raising gasoline prices on Americans with no plan and no accountability | Governor of California*. Governor of California. https://www.gov.ca.gov/2026/03/10/governor-newsom-blasts-trump-for-raising-gasoline-prices-on-americans-with-no-plan-and-no-accountability/

The lack of ready reserves complicates military logistics planning and reduces confidence in California's ability to support U.S. national security interests in the event of kinetic conflict in the far Pacific region. Under normal conditions, the U.S. military consumes about 269,000 barrels (11.3 million gallons) of oil daily and upwards of 4.6 billion gallons of fuel annually,[107] making it the world's single largest institutional consumer of fuel.[108] Comparatively, the U.S. military consumes more fuel than Portugal, Peru, Sweden, Greece, and Switzerland. The U.S. military routinely purchases over 100 million barrels (4.2 billion gallons) of fuel annually. During extended deployments and exercises, total consumption can reach the scale of a small city or state. The figure below illustrates the estimated distribution of fuel consumption for 2025 by combat branch of service.

**Figure 6.1:**[109]
**Estimated Distribution of Fuel Consumption by Branch of Service- 2025**




Additionally, the U.S. Coast Guard consumes about 58 to 62 million gallons (1.4 to 1.5 million barrels) of fuel annually while protecting America's shores and waterways and fulfilling its mission of "Semper Paratus." The figure below summarizes, in general terms, the fuel requirements for U.S. military assets.

[107] *US military exits climate change after a decade of waste*. (2025, April 2). Energy Central. https://www.energycentral.com/energy-biz/post/us-military-exits-climate-change-after-decade-waste-ws1XUsN2bnxoljc
[108] Pierrel, F. (2026, July 28). *US defense spending cuts: a potential source of energy for a small nation*. EnerTherm Engineering. https://enertherm-engineering.com/blog/us-defense-spending-cuts-a-potential-source-of-energy-for-a-small-nation
[109] Cook, E. (2026, June 4). Surging gas prices are hitting the Pentagon: most affected equipment. *Newsweek*. https://www.newsweek.com/surging-gas-prices-are-hitting-pentagon-most-affected-equipment-12030530

**Figure 6.2[110]**
**Example of Typical Fuel Type Usage by U.S. Combat Branch of Service**

| Military Branch | Fuel Type | APPLICATION |
|---|---|---|
| U.S. Air Force | JP-8 | **JP-8 -** Jet fuel for virtually all aircraft; smaller quantities of diesel for ground support equipment |
| U.S. Navy | JP-5<br>F-76<br>JP-8 | **JP-5 -** Jet fuel for carrier-based aircraft<br>**F-76 -** Naval diesel for ships and auxiliary vessels<br>**JP-8 -** Land-based Navy aircraft |
| U.S. Army | JP-8<br>JP-8+F-24 | **JP-8 / JP-8+F-24 (kerosene-based diesel) -** As the primary fuel for ground vehicles, generators, and rotary-wing aircraft; minimal gasoline usage |
| U.S. Marine Corps | JP-8 / Diesel<br>JP-5 | **JP-8 / Diesel -** Ground vehicles and expeditionary equipment<br>**JP-5 -** Aviation assets operating on Navy carriers or amphibious ships. |

Over 98% of crude oil and fuels delivered to California arrive by maritime transport, primarily from the Middle East, South Korea, South America, and the Bahamas. Military fuels transported through pipelines typically share those lines with other fuels. The only major pipelines that directly connected a refinery to a military installation ran between the Valero Benicia Refinery and Travis Air Force Base, while others maintain interstate connections with NAS Lemoore and USAF Edwards. However, Valero voluntarily shut down its refinery in early 2026 and no longer produces fuel in Benicia. Travis AFB consumes 137,000 to 200,000 gallons of fuel daily, or about 45 to 84 million gallons (123,000 to 200,000 barrels) of jet fuel annually.[111] Bases such as Point Mugu are of particular concern because they rely exclusively on trucking for fuel delivery. NAS Lemoore receives fuel through a dedicated 6-inch pipeline owned and operated by Kinder-Morgan (KM), which connects to larger lines in the KM system.[112] Fuel tanker truck deliveries also supplement pipeline fuel movement to NAS Lemoore and serve as a redundant capability.

### 6.3 Defense Fuel Storage

Defense Fuel Support Points (DFSPs) maintain only limited working stock to support ongoing missions and rely on the same commercial refineries and pipeline networks that serve civilian markets. Minimal military reserves, about 1.0 to 1.4 million barrels (approximately 50 million gallons), are dispersed throughout the state, the largest of which is Point Loma.[113] Minimal inventories of 105,000 barrels are stored at NAS Lemoore.[114] U.S. Pacific readiness begins to degrade within ~72 hours under Defense Fuel Support Point (DFSP) cover levels verified in the

[110] Various sources including but not limited to the USAF, USN, USMA, USA, DoW, and Jane's.
[111] Travis AFB consumes, on average, 1.1 million to 1.43 million barrels of fuel annually, but consumption can vary considerably to over 200,000 gallons or 4,800 barrels per day based on operations.
[112] Products Home page. (2121, November 19). Kinder Morgan. https://kindermorgan.com?Operations/Products/Index
[113] *Defense Fuel Storage Facility*. (n.d.). https://www.ibuildamerica.com/projects/defense-fuel-storage-facility/
[114] *Fuel Storage & Distribution System replacement for NAVFAC Southwest Desert IPT | APTIM*. (2022, December 28). APTIM. https://www.aptim.com/projects/fuel-storage-distribution-system-replacement-for-navfac-southwest-desert-ipt/

DLA Energy Logistics Manual (3–5 days of peacetime working stock), with degradation accelerating under surge demand.[115]

Beginning around 1942, the U.S. used Hawaii as the central fuel repository for the Pacific Command. The Roosevelt Administration designated a site called Red Hill as the central fuel depot for the Pacific and began construction in 1940.[116] The site stored gasoline, jet fuel, aviation gasoline, diesel fuel, and other fuels. Collectively, the facility was massive, with the capacity to store more than 250 million gallons of fuel in underground storage tanks. That's about 19 days of fuel for California based on current consumption rates. The facility was in the mountain range above Pearl Harbor and connected to Pearl Harbor and Hickman Field via gravity-fed pipelines. Over the years, Red Hill deteriorated and required expensive maintenance and environmental remediation. Consequently, during the Biden Administration, the fuel depot was slated to begin decommissioning. The facility is currently closed and in the decommissioning phase.

The U.S. Navy maintains a 1.0-million-barrel storage facility at Point Loma, California. Point Loma is the largest naval fuels storage facility on the West Coast and dispenses 400 million gallons of fuel annually at a high-speed transfer rate of 300,000 gallons per hour. JP-5 jet fuel and F-76 marine fuel are stored in a state-of-the-art facility with eight 125,000-barrel aboveground tanks and 17 fueling stations. For comparison, Point Loma's capacity is equivalent to about 1.0 to 1.2 days of California gasoline consumption. The figure below summarizes the estimated fuel storage capacities for selected U.S. military installations in California.

**Figure 6.3**

**SELECTED CALIFORNIA MILITARY INSTALLATIONS & ESTIMATED FUEL STORAGE CAPACITIES**

| INSTALLATION | Designated DSFP | Estimated Barrels | Estimated Gallons | Typical Fuel Type | Direct Pipeline Connection |
|---|---|---|---|---|---|
| **USAF- Travis** | Yes | 357,143 | 15,000,000 | JP-8, Jet A | Yes- Valero |
| **USAF- Edwards** | No | 15,476 | 650,000 | JP-8, Jet A | Yes- CALNEV |
| **USAF-USSF- Vandenberg** | Yes- Partial | 1,000,000 | 42,000,000 | Various | No |
| **NAS- Lemoore** | Yes | 105,000 | 4,410,000 | JP-5, F-76 | Yes- KM |
| **NAS- Point Loma** | Yes | 1,000,000 | 42,000,000 | JP-5, F-76 | Yes |
| **NAWS- China Lake** | Yes | 10,238 | 430,000 | JP-8, JP-5. F-76 | No |
| **USMC- Pendelton** | No | 50,000 | 2,100,000 | JP-8, JP-5. F-76 | No |
| **Joint Base Los Alamitos** | No | 4,651 | 200,000 | JP-8, F-76 | No |

(Various sources, including the DoW, DLA, CEQA, USN, USMC, USAF, USSF.)

[115] *CA Impact on Force Readiness. Stan Ellis, Michael Mische, and Mike Ariza. Executive Summary 10-21-2025.pdf.* (n.d.). Google Docs. https://drive.google.com/file/d/1kDC3Kwqoj3p3NL7fE1rLad-cG-8Y4fgK/view?pli=1

[116] Wikimedia Foundation. (2026, August 9). *Red Hill Underground Fuel Storage Facility*. Wikipedia. https://en.wikipedia.org/wiki/Red_Hill_Underground_Fuel_Storage_Facility

### 6.4 California Vulnerabilities, Chokepoints & Sustaining Combat Operations

It is widely known that the reduction in in-state refinery capacity, especially from 2019 to 2026, has left California the most reliant of all 50 states on foreign oil and fuels and "exposed to global markets."[117] Reliance on foreign suppliers, such as Iraq for crude oil and India and South Korea for gasoline and jet fuels, whose supplies must pass through the Strait of Hormuz and the Bab-el-Mandeb Strait, is not a prudent economic or national security strategy. In fact, California policies knowingly expose the state and the nation to unnecessary geopolitical risk and the whims of adversaries who can manipulate supplies and prices.[118] This has left California's energy sector anemic and increased dependence on foreign oil sources, foreign refineries, and foreign-owned maritime tankers for fuel, thereby damaging U.S. force readiness and national security.

U.S. military assets require large quantities of fuel to sustain even moderate combat operations. Fuel consumption is considerably higher during combat. For perspective, the USS Abraham Lincoln[119] conducted more than 10,000 combat and reconnaissance sorties in the Iranian conflict over 260 days…that's an average of 38 sorties a day, non-stop, for 260 days.[120] A conservative estimate of aviation fuel expended in those operations is around 744,050 barrels or 31.2 million gallons. During the Gulf War, the U.S. military consumed 1.88 billion gallons (44.8 million barrels) of fuel, averaging about 6.4 million gallons per day over the 10-month period from August 1990 to May 1991.[121] Over 130 million barrels of petroleum were consumed during the peaks of the wars in Iraq and Afghanistan.[122]

By comparison, California consumes about 34.5 million gallons of gasoline per day, or 820,000 barrels. In a **Pacific regional conflict, the U.S. military could easily consume fuel equal to 15% to 25% of California's average daily private and commercial consumption**. Diverting this amount of fuel from private and commercial channels to military operations would devastate California's private sector, its agricultural and industrial production, and the national economy. A 2025 report estimated an immediate $338 billion loss in economic contribution to the California economy, or about 8% of its GDP, the loss of 536,700 jobs, and close to $65 billion in tax revenues, all of which are just due to the oil and gas industry.[123] More significantly, losing 25% of its fuel would, as the closure of two refineries has shown, drive up consumer and general cost-of-living prices, and adversely impact agricultural and industrial production.

As noted in a 2023 study, "A major conflict in the Pacific would likely push U.S. logistics efforts to the breaking point, putting any expeditionary forces in the region in a precarious position."[124] Distant operations require extensive fuel logistics support, complex tanker choreography, and, as

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[117] Statement of California Energy Commission Vice Chair Siva Gunda.

[118] *Assembly Standing Committee on Utilities and energy May 5, 2026: Digital Democracy*. May 5, 2026 | Digital Democracy. (n.d.). https://calmatters.digitaldemocracy.org/hearings/279528

[119] https://en.wikipedia.org/wiki/USS_Abraham_Lincoln_(CVN-72)

[120] https://www.wsj.com/world/middle-east/iran-war-commander-visits-the-uss-abraham-lincoln-ece7a4da

[121] Resilience.org. (2020, December 15). *The US military oil consumption*. See Resilience. https://www.resilience.org/stories/2006-02-26/us-military-oil-consumption/. See also, CIA World Factbook

[122] Prioritize operational energy for expeditionary forces | proceedings - October 2023 vol. 149/10/1,448. (n.d.). https://www.usni.org/magazines/proceedings/2023/october/prioritize-operational-energy-expeditionary-forces

[123] Los Angeles County Economic Development Corporation. (2025, March 25). *Oil & Gas In California | Los Angeles County Economic Development Corporation*. https://laedc.org/download/oil-gas-in-california/#1

[124] Prioritize operational energy for expeditionary forces | proceedings - october 2023 vol. 149/10/1,448. (n.d.). https://www.usni.org/magazines/proceedings/2023/october/prioritize-operational-energy-expeditionary-forces

other studies have noted, greater fuel tanker capacity. A 2019 study concluded that "absent dramatic improvements, U.S. sealift forces would face major challenges and may fail to meet Joint Force demands in a major war."[125] In operations against distant adversaries, American aircraft carriers are indispensable yet vulnerable weapon systems. Modern weapon systems, such as those deployed by China, have extended-range capabilities, forcing carrier operations to launch sorties from greater distances. In a major regional, non-nuclear conflict with China involving Taiwan and/or the South China Sea, the U.S. would commit a strike force comparable to, and slightly larger than, the one used in the Iranian conflict.

However, unlike the Iranian conflict, U.S. carrier and aircraft assets would be within the lethal range of Chinese missiles, which are more sophisticated and more abundant than those confronted and defeated by the U.S. in the Iranian situation. Furthermore, the U.S. would have to consider the missile capabilities of North Korea. This is a dangerous scenario that could escalate into a larger conflict involving Russia and what remains of Iranian assets, requiring U.S. carriers to stay outside of missile and drone swarm range. The distance complicates U.S. war fuel and replenishment planning.

With the closure of Red Hill Depot, the military now distributes fuel through new and expanded bulk sites in Australia (Darwin ~ 80 million gallons), Guam, Japan, Korea, and the Philippines. Guam serves as a central fuel storage facility for the U.S. Air Force. The U.S. operates a 66-million-gallon (1.6 million barrels) jet fuel facility and more than 26 miles of pipelines on Guam, with additional capacity of more than 350,000 barrels. There is also some storage capacity on Okinawa, Japan, but it is limited and within easy reach of Chinese missiles. For Guam and Okinawa, fuel is delivered to those bases by maritime vessels, which are vulnerable to air and seaborne threats during times of conflict. Thus, crude oil and refining capacity in California become increasingly important given these potential exposures.

Forward supply and "sleeper" sources, such as Guam and Japan, are within missile range of America's most likely adversary, making them unusable. Despite the most formidable defense systems of any vessel in history, U.S. aircraft carriers would not venture into the range of those weapon systems without assuming considerable risk. The figure below summarizes some U.S. fuel storage sites, capacities, and dangers in the Pacific-Asia-Indo region.

[125] Timothy Walton, Ryan Boone, and Harrison Schramm, *Sustaining the Fight: Resilient Maritime Logistics for a New Era* (Washington, DC: Center for Strategic and Budgetary Assessments, April 2019), 76.

**Figure 6.4:**[126]
**Distribution of Forward Storage Sites**

| SELECTED PACIFIC U.S. MILITARY FUEL RESERVES/STOCKPILES & VULNERABILITY | | | | | |
|---|---|---|---|---|---|
| **Location** | **US Storage Reserve/ Capacity (Barrels)** | **Storage Vulnerability** | **Fuel Resupplied By** | **In-situ Crude Oil Production** | **Within Range of DF-21D, DF-26, & DF-27** |
| Japan | Classified | High | Maritime | None | Yes |
| Diego Garcia | 1.3 mil. | High | Maritime | None | Yes |
| Australia | 1.9 mil. | Moderate | Maritime | None | Yes-Limited |
| Guam | 1.6 mil. | High | Maritime | None | Yes |
| Philippines-Mindanao | 10.1 mil | High | Maritime | None | Yes |
| Red Hill- Hawaii | None | Low | Maritime | None | No |

As shown in the figure above, all forward reserve fuel facilities and forward-bunkered supplies fall within range of China's DF-21D, DF-26, and DF-27 missiles. In a major conflict, advanced fuel sites would likely be first-strike targets, placing extreme pressure on Carrier Strike Groups and combat aircraft to manage fuel and replenishment. The range and payloads of DF-class Chinese missiles require U.S. naval forces to operate 1,650 to 2,700 statute miles off the coast of mainland China, adding refueling and logistical pressures to support airwing operations. In a military confrontation, Chinese ballistic missiles and naval blockades would most likely neutralize access to Middle Eastern oil and fuel from India, Singapore, and South Korea. Both crude and refined fuel supplies from those sources would stop, or at best be rerouted, extending time at sea and increasing shipping costs and consumer prices. Fuel stored at forward facilities in Guam, Japan, South Korea, and the Philippines, or at "sleeper cell" facilities, would be inaccessible to U.S. naval and air forces due to the range of Chinese missiles and the threat of drone swarm attacks. America would not risk its carriers by recklessly placing them in harm's way of China's intermediate-range missiles, such as its DF-26 "Guam Killer" and the YJ-21 and YJ-12 hypersonics, which can reach targets as far as 3,100 miles from their launch sites. The lethality of the JY-21E hypersonic anti-ship missile is further enhanced because it can be launched from the air via China's J-10C multirole fighter. The appearance of the JYE-21 air-launched weapon system "could profoundly complicate regional air and maritime defense planning across the Indo-Pacific."[127]

America faces dangers from a variety of foreign foes, and California is the vanguard against those in the Indo-Pacific Region. California is a major staging platform for U.S. military assets and readiness in a world that is far from stable and secure. Significant military conflicts strain the industrial and logistical structures of any nation, including those of superpowers such as the U.S. Any Pacific Region conflict would most likely involve the People's Republic of China (PRC), direct kinetic actions[128] by the People's Liberation Army, Navy, and Air Force, and negotiations with the Communist Party of China (CPC). A conflict with China over Taiwan would result in even higher military fuel consumption, requiring a larger share of California's fuel supply.

[126] Approximated and not a complete list. Some data are classified and publicly accessible.
[127] Admin. (2025, December 25). *Breakthrough in Chinese airpower: J-10C fighter spotted carrying YJ-21E hypersonic missile*. DSA. https://defencesecurityasia.com/en/china-j-10c-yj-21e-hypersonic-missile-integration/
[128] For this paper the assumption was made that any military actions would be conventional and/or cybernetic and non-nuclear.

Contrary to U.S. national security concerns, over the past 6 years, California has increased its dependence on foreign fuel imports, predominantly from India and South Korea, in addition to China. This fact cannot be lost on the Chinese People's Liberation Army's (PLA) war planners. In the event of conflict with China, China would block fuel sources from India and South Korea. As we discuss**, simply blocking fuel shipments from India and South Korea, and the PRC will cripple the California economy and cause havoc with U.S. military supplies.**

Historically, India has received as much as 40% of its crude oil from Russia. That crude is refined into California gasoline and jet fuel, and, in a serendipitous way, supports the regime of Vladimir Putin. South Korea, which produces most of the jet fuel imported by California, and India both receive crude imports from the Middle East, requiring passage through the Strait of Hormuz and the Red Sea's Bab-al-Mandeb Strait, both chokepoints subject to attack by Iranian and Houthi forces. Bahamian fuel imports by California reached all-time highs in 2026. As reported by Bloomberg, gasoline blend stocks produced by U.S. Gulf Coast refineries are shipped via tanker to Freeport, Bahamas, re-blended, and transported to California on foreign-flagged tankers. The trip from the Texas Gulf Coast to the Bahamas, through the Panama Canal, to Los Angeles is around 5,500 nautical miles (approximately 6,330 statute miles), which adds to the consumer price of fuel, increases greenhouse gas emissions, and increases U.S. national security risks in the Panama Canal as a strategic chokepoint. By comparison, the distance traveled is similar to the distance from Los Angeles to Yokohama, Japan.

The commonsense calculus is that California's extreme reliance on imported oil and fuels, especially from India and South Korea, further exposes the state to geopolitical tensions and, by association, the U.S. to the same threats. As much as 62% of California's gasoline and jet fuel imports from foreign refiners rely on crude oil produced in the Middle East, or on crude oil or finished fuels that must pass through chokepoints such as the Strait of Hormuz, the Turkish Straits, or the Bab al-Mandab Strait. Some of that fuel is consumed by America's military forces, putting U.S. readiness at risk. 100% of California's imported gasoline and other fuels sourced from the Bahamas must also pass through the Panama Canal.

**Figure 6.5**[129]

| General California Sources for Gasoline by Nation by Typical Source of Crude Oil | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Refinery/Supplier Source | Crude Oil Source | | | | | | | | | | | |
| | Russia | Iran | Venezuela | Saudi Arabia | Brazil | Iraq | Kuwait | USA | UAE | Qatar | Guyana | Norway Europe |
| **India** | Yes | | | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes |
| **South Korea** | | | | Yes | Yes | Yes | Yes | Yes | Yes | | | |
| **Japan** | | | | Yes | | | Yes | Yes | Yes | Yes | | |
| **Singapore** | | | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| **China** (Reseller) | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | |
| **United Kingdom** | | | | | | | | Yes | | | Yes | Yes |
| **The Netherlands** | Yes | | | Yes | | | Yes | | | Yes | Yes | Yes |

Chokepoints such as the Strait of Hormuz and the Strait of Malacca heighten California's vulnerability to disruptions, hostile regimes, and unstable governments. They also threaten U.S. military supplies sourced from California, which depend on crude oil and fuel from the Middle East. Jet fuel supplied to California by its largest supplier, South Korea, is particularly exposed to geopolitical events or kinetic actions in the Sea of Japan and the Strait of Taiwan.

[129] Various sources as complied by authors.

**Figure 6.6**[130]
**California Foreign Crude and Gasoline Sources**
**and**
**Potential Vulnerabilities & Exposures by Chokepoint**

| California Gasoline Import Vulnerabilities & Chokepoints | | | | | |
|---|---|---|---|---|---|
| **Area** | **California Gasoline Chokepoint** | **Major Influence/Control** | **Risk Level(1)** | **Potential Threat** | **Within Range of Iranian Missiles (2)** |
| Strait of Taiwan | Yes | China | Severe | China | No |
| Strait of Hormuz | Yes | Oman-Iran | Severe | Iran | Yes |
| Bab-al-Mandeb | Yes | Yemen | Severe | Iran-Houthi | Yes |
| Suez Canal | Yes | Egypt-Israel-Saudi Arabia | High | Iran-Houthi | Yes |
| Strait of Malacca | Yes | Indonesia-Malaysia | Low | China | No |
| Sunda Strait | Yes | Indonesia | Moderate | China | No |
| Sea of Japan | Yes | Japan-So. Korea | Low | China | No |
| Turkish Straits | Yes | Russia-NATO | Moderate | Iran-Russia | Yes |
| Danish Straits | No | Russia-NATO | Low | Russia | No |
| Panama Canal | Yes | US-Panama | Low | China | No |
| (1) Based on https://www.mi5.gov.uk/threats-and-advice/terrorism-threat-levels | | | | | |
| (2) Based on https://missilethreat.csis.org/country/iran/ | | | | | |

Reliance on friendly nations for fuel storage and replenishment is proving problematic for the U.S. and other nations. Australia is experiencing fuel supply stresses and rising consumer prices due to Strait of Hormuz constraints and has only one operating refinery for the entire nation. The Philippines, a longtime base for U.S. Asian operations, receives over 90% of its oil from the Middle East. As of March 24, 2026, the Philippines had about 40-45 days' supply of gasoline and has declared a national emergency. New Zealand has about 49 days, while South Korea, with its refineries, has 200 days. However, South Korea shares a demilitarized border with North Korea, which has the objective of destroying the nation. In the event of conflict, it is doubtful that the U.S. could use South Korea as a fueling source. Notably, South Korea supplies California with about 22% of its imported fuel and is the state's third-largest source of gasoline behind India (26%) and the Bahamas (22%) for 2024/25, according to the CEC.

In the event of a major military conflict in the Pacific, most likely involving the People's Republic of China, Taiwan, the South China Sea, or North Korea, the U.S. would have to, as it did in World War II and Vietnam, traverse nearly 7,000 miles of open ocean to conduct non-nuclear combat operations. The distance is even greater and more challenging when operations involve the Strait of Malacca or the Sunda Strait. Taiwan is essential to the U.S. and Western world because it produces 60% of all silicon chips and about 90% of the most advanced silicon chips worldwide.[131] California's Silicon Valley, the birthplace of the chip and epicenter of the tech industry, is reliant on Taiwan. President Xi Jinping of the PRC has stated that Taiwan is "sacred" territory and that the reunification of Taiwan with the PRC is "… a historical inevitability."[132] To this end, the PRC

[130] Various sources including the CEC, CIA, MI5, Jane's, and others.
[131] Admin. (2025, July 17). Who Makes the World's Chips? Top 5 Semiconductor Producing Countries Ranked. Wafer Process Systems. https://waferprocess.com/artificial-intelligence/who-makes-the-worlds-chips-top-5-semiconductor-producing-countries-ranked/
[132] Reuters. (2023, December 31). China's Xi says "reunification" with Taiwan is inevitable. Reuters. https://www.reuters.com/world/asia-pacific/china-calls-taiwan-president-frontrunner-destroyer-peace-2023-12-31/

has built full-scale replicas of essential Taipei government buildings, the presidential office, streets, and facilities,[133] [134] as well as replicas of U.S. fighter aircraft and carriers,[135] at its Zhurihe military training facility in Mongolia.[136] The PLA routinely conducts Taiwan strike, assault, and blockade training exercises at the facility.[137]

China's investment in its conventional and nuclear warfare assets has been described as "extraordinary."[138] Starting in 1995, the PRC embarked on a massive military build-up, making the U.S. more vulnerable to PRC aggression. Over the last 30 years, China's military spending has increased 13x to over $470 billion.[139] By 2035, the DoW estimates that the PLA will have 9 aircraft carriers to America's 11,[140] and over 1,000 nuclear warheads.[141] According to U.S. intelligence, China's Houyan-1 satellites can detect ICBM launches within 90 seconds, calculate initial trajectories, and inform command within 3 to 4 minutes. Furthermore, the PRC is aggressively updating its fighter wings to fifth-generation aircraft and maintains the world's largest arsenal of conventional ground-based missiles, such as the DF-26, which has a range of 2,485 miles and can reach U.S. fuel stockpiles in Guam and Mindanao, Philippines, as well as any U.S. naval asset within its range. China has built over 20 artificial islands, representing some 3,000 acres in the South China Sea. Ostensibly, the islands serve a dual civilian-military purpose; however, they house KJ-500 early warning radar installations, China's H-6 bomber aircraft and J-11 fighter aircraft, anti-ship cruise missiles, and SAM sites armed with HQ-9, YJ-62, and YJ-12B weapons.[142] The location of China's artificial islands, together with the range of its bomber aircraft, allows China to control the South China Sea and the critical Strait of Malacca, both essential crude oil routes to refineries located in Singapore and South Korea.

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[133] World Desk, T. (2025, October 2). "Mock Taipei": China expands replica of Taiwan's govt buildings in Mongolia; satellite images show site tripled in size since 2020. The Times of India; The Times Of India. https://timesofindia.indiatimes.com/world/china/mock-taipei-china-expands-replica-of-taiwans-govt-buildings-in-mongolia-satellite-images-show-site-tripled-in-size-since-2020/articleshow/124271981.cms

[134] Kapil Kajal. (2025, October 3). China builds Taiwan capital replica to train troops for potential war. Interesting Engineering. https://interestingengineering.com/military/china-builds-expansive-mini-taipei

[135] Copies of U.S. Ships and Fighter Jets and Taiwan's Presidential Palace: What Is Hidden in China's Desert. (2026). Militarnyi. https://militarnyi.com/en/news/copies-of-u-s-ships-and-fighter-jets-and-taiwan-s-presidential-palace-what-is-hidden-in-china-s-desert/

[136] Senior Editor. (2026, June 22). CHINA'S MINI TAIPEI AT ZHURIHE: LONG-TERM MILITARY PREPARATION AND THE SHORT-TERM GAP BETWEEN COERCIVE SIGNALI. CTG. https://www.counterterrorismgroup.com/post/china-s-mini-taipei-at-zhurihe-long-term-military-preparation-and-the-short-term-gap-between-coerci

[137] PLA adds to "mock Taipei" for decapitation strike drills | Taiwan News | Oct. 2, 2025 17:23. (2025, October 2). Taiwannews.Com.Tw. https://www.taiwannews.com.tw/news/6212448

[138] Torode, G. (2026, May 29). China is building launch pads near its nuclear missile silos. Defense News. https://www.defensenews.com/global/asia-pacific/2026/05/29/china-is-building-launch-pads-near-its-nuclear-missile-silos/

[139] Funaiole, M. P., & Hart, B. (2025). China's Military in 10 Charts. Csis.Org. https://www.csis.org/analysis/chinas-military-10-charts

[140] Noury, T. (2025, December 24). China's military buildup makes US increasingly vulnerable, DOD says. Military Times. https://www.militarytimes.com/news/pentagon-congress/2025/12/24/chinas-military-buildup-makes-us-increasingly-vulnerable-dod-says/

[141] Noury, T. (2025, December 24). China's military buildup makes US increasingly vulnerable, DOD says. Military Times. https://www.militarytimes.com/news/pentagon-congress/2025/12/24/chinas-military-buildup-makes-us-increasingly-vulnerable-dod-says/

[142] Center for Strategic and International Studies. (n.d.). Chinese Power Projection Capabilities in the South China Sea. Asia Maritime Transparency Initiative. Retrieved September 2, 2026, from https://amti.csis.org/chinese-power-projection/

Significantly, for both the U.S. and California, the major routes for crude imports and gasoline shipments fall within the range of Iranian and Chinese missiles. While this distributed model may diversify storage sources, the U.S. cannot rely on it, as it considerably amplifies vulnerabilities to national defense. Under prevailing conditions, California's antagonistic policies on in-state crude oil production, refinery operations, and pipeline usage further amplify vulnerabilities and underscore the need for federal intervention. In the event of a major confrontation, it is likely that Iran, a chief provider of crude oil to the PRC, would align itself with China, as would the Houthis in Yemen. Iran's Soumar missile has a range of 1,860 miles, making it capable of hitting EU targets. If left intact, Iran's Soumar has low-altitude cruising capabilities, which allow it to evade radar. Additionally, Iran apparently has multi-warhead (cluster) hypersonic missiles, specifically the Fattah-1 and Fattah-2, believed to sustain speeds above Mach 13 (9,975 mph), with impact speeds ranging from Mach 5 to 8;[143] these missiles could be configured to deliver nuclear payloads. The Houthis, as was shown in the Irania conflict, can and will attack Saudi Arabian pipelines and refineries on the Red Sea, and disrupt maritime transit through the Strait of Bab-al-Mandeb.[144]

The PRC's alignment with Iran, no matter to what extent, would pose a formidable challenge for any nation and would be more profound than the Iranian conflict. The combined military reach of a PRC-Iranian alignment would disrupt and potentially close the Strait of Taiwan, the Strait of Hormuz, the Strait of Malacca, the Turkish Strait, the Bab-al-Mandeb Strait, and the Sunda Strait, as all are within range of Iranian and PRC missiles. The potential consequences to California and U.S. national security and military combat readiness are alarming:

i. Around 30% of California's imported crude oil must pass through strategic geographical chokepoints and would most likely be unavailable or "lost" in any military action.

ii. Around 64% of California's gasoline and jet fuel imports must pass through strategic geographical chokepoints and would most likely be unavailable or "lost" in any military action.

In the event of a conflict in the far Pacific involving Taiwan or even North Korea, a close ally of the PRC, it is doubtful that crude oil and fuel supplies would move freely to and from South Korea, that Guam would be isolated, if not neutralized, and that the Philippines and the Suez Canal would be at risk. North Korea, a close ally of China, has intensified its threats to destroy South Korea, the source of 22% of California's imported gasoline, and has escalated its threats to the region and the U.S. homeland through nuclear missile testing and weapons. In such a situation, the fuel planning assumptions used years ago to prosecute and sustain military action at scale would largely become invalid, as forward reserves and bunkered supplies (depots) would be well within range of enemy missiles and bombers. The most viable, self-determined solution to counter such a scenario would be California's ability to rapidly scale up both crude oil and refinery production.

[143] Administrator. (2025, June 19). Fattah-1 Hypersonic Missile. Armyrecognition.Com. https://www.armyrecognition.com/military-products/army/missiles/hypersonic-missiles/fattah-1-hypersonic-missile

[144] Al Jazeera Staff. (2026, August 9). Houthi attacks kill seven in Yemen, refinery targeted in Saudi Arabia. Al Jazeera. https://www.aljazeera.com/news/2026/8/9/saudi-arabia-says-fire-extinguished-at-aramco-facility-in-jizan

### 6.5 California Rapid Response Fuel Reserve (RRFR) – Our Recommendation

To offset the realities of offensive and defensive strategies that would impede U.S. use of forward fuel depots, the most logical option is to build a Rapid Response Fuel Reserve (RRFR) in California that can surge fuel to U.S. military assets in the Pacific Command. Based on our analysis, we estimate that U.S. national security and military force readiness would be significantly enhanced by adopting the fuel surging strategy discussed above. Our preliminary, non-classified estimates indicate that approximately 22.8 to 53.4 million barrels of crude oil and 961 million to 2.2 billion gallons of fuel would be required as reserves to sustain the surging strategies outlined in this study.[145]

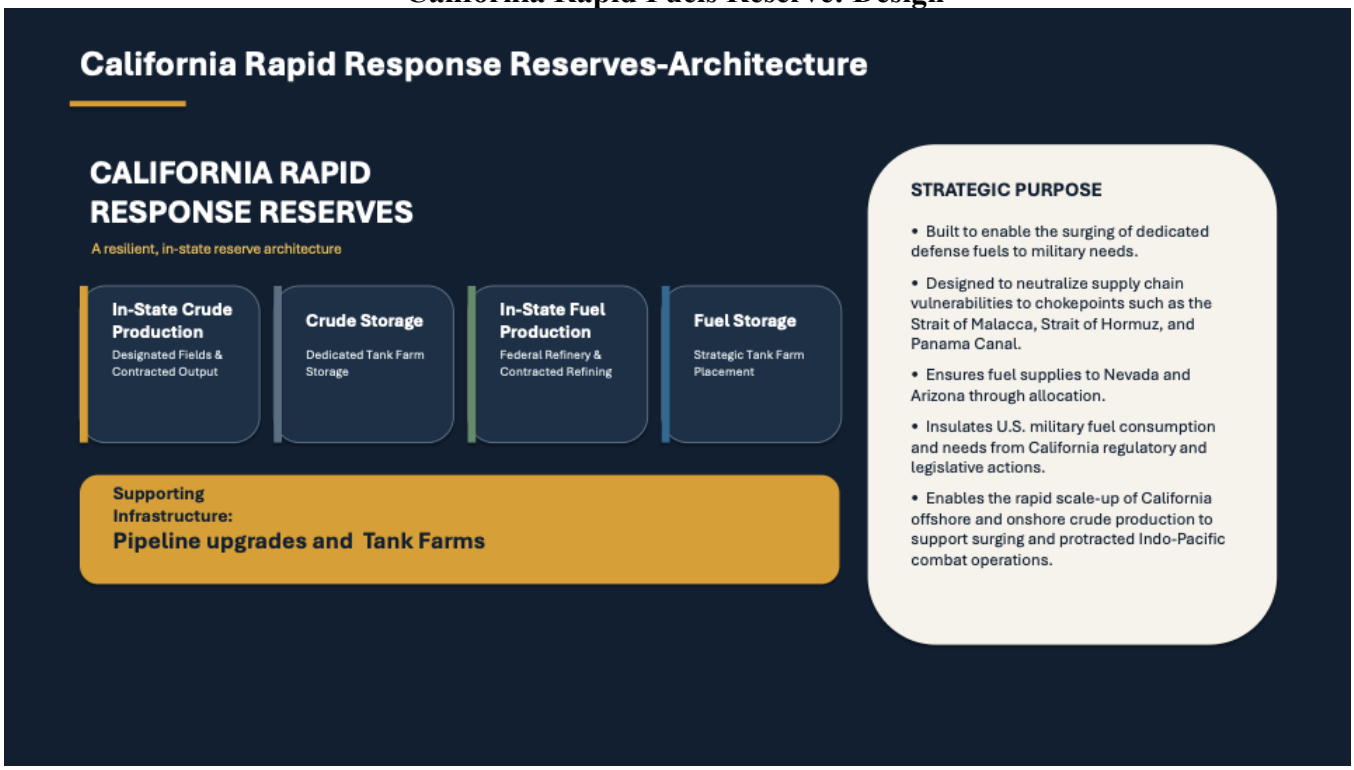
**Figure 6.7**
**California Rapid Fuels Reserves**
**Range of Reserves**

| RRFR- Estimated Reserve Requirements by Range of Duration | | |
|---|---|---|
| **Estimated Duration** | **Barrels- Crude** | **Fuel- Gallons** |
| Low Duration Need | 22,882,575 | 961,110,000 |
| Mid Duration Need | 35,595,116 | 1,495,060,000 |
| High Duration Need | 53,392,674 | 2,242,590,000 |

To achieve the estimated reserves of crude oil and finished fuels and to address national security and force-readiness concerns stemming from California oil and refinery policies, we have designed an architecture for a California Rapid Response Fuel Reserve (RRFR). The RRFR is intended to enable an initial **surge** of fuel from California-based tank farms to meet military needs in the far Pacific region, followed by sustained production and refining of crude oil into fuel to continuously replenish the RRFR…all originating in California. Figure 6.8 below illustrates the design of the California RRFR.

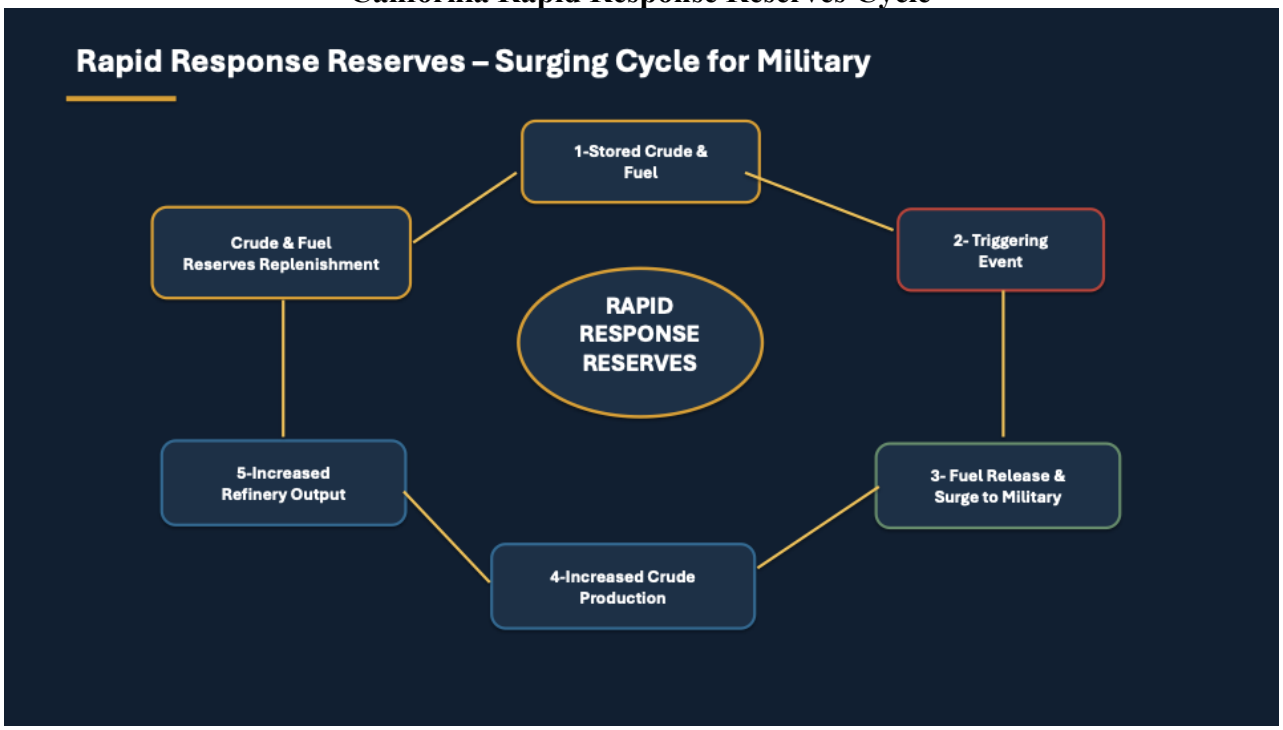
[145] These are preliminary estimates only provided for discussion purposes only and are, therefore subject to various interpretations and changes based on the models, scenarios, data, and assumptions used. Users and readers are strongly advised to use caution and to perform their own due diligence and analysis before relying upon these and any other estimates provided herein or by the authors. The authors reserve the right to update, modify and edit any estimate and more refined estimates may be forthcoming based on data availability.

**Figure 6.8**
**California Rapid Fuels Reserve: Design**




As depicted in the figure below, the RRFR design has five primary components: (1) Stored Crude & Fuels, (2) Triggering Event, (3) Surged Fuel Release to Military, (4) Increased Crude Production, and (5) Increased Refinery Output. Upon a triggering event and the orders and direction of POTUS, the Secretary of War would direct all California storage facilities to surge inventories in support of military needs and direct all California crude oil producers and refinery operators to rapidly increase production to further surge and replenish inventories. The figure below illustrates the "surge sequence."

**Figure 6.9**
**California Rapid Response Reserves Cycle**




There are multiple ways to create the RRFR to ensure U.S. force readiness and national security. In our analysis, we have summarized multiple approaches into five strategic options. The options range from the most desirable, "Full Expansion," to the least desirable and riskiest option: relying on "California Status Quo." The figure below summarizes the salient attributes of each of the five options.

**Figure 6.10**
**Summary of Salient Attributes: Five RRFR Options**

| ATTRIBUTES BY STRATEGIC OPTION | | | | | |
|---|---|---|---|---|---|
| **Attributes of Strategic Option** (Requires and/or involves the following) | **Option-1** | **Option-2** | **Option-3** | **Option-4** | **Option-5** |
| | **Full Expansion** | **Partial Expansion-Crude Only** | **Rely on CA Policy-Import More** | **Mandatory Allocation** | **Rely on CA Policy-Maintain Status Quo** |
| **Opening New Fields & Reserves** | Yes | Yes | No | No | No |
| **New Drilling- New Fields** | Yes | Yes | No | No | No |
| **New/ Expanded Drilling- Existing** | Yes | Yes | No | No | No |
| **Expanded Refinery Capacity-Existing** | Yes | Partial | No | Partial | No |
| **New Refinery Capacity** | Yes | No | No | No | No |
| **New Crude Tank Storage Farms** | Yes | Yes | No | Yes | No |
| **New Fuel Tank Storage Farms** | Yes | Yes | No | Yes | No |
| **New Pipeline Capacity** | Yes | Yes | No | Yes | No |
| **Renovation of Existing Pipelines** | Yes | Yes | Limited | Yes | No |
| **Expanded Use of BLM Properties** | Yes | Yes | No | No | No |

Each RRFR option affects California law. For urgency and prudence, some California laws may have to be overridden and/or preempted because the essential and primary concern is U.S. national security, force readiness, and the ability to fight and win a war in the far Pacific. Accordingly, we have incorporated these factors into a high-level impact analysis of each option and summarized them in the figure below.

**Figure 6.11**
**Impact Assessments of RRFR Implementation Options**

| POTENTIAL IMPACT ASSESSMENT BY STRATEGIC OPTION | | | | | |
|---|---|---|---|---|---|
| IMPACT AREA | Option-1 | Option-2 | Option-3 | Option-4 | Option-5 |
| | Full Expansion | Partial Expansion-Crude Only | Rely on CA Policy-Import More | Mandatory Allocation | Rely on CA Policy-Maintain Status Quo |
| Best Interests of U.S. | Yes | Yes | No | As Necessary | No- Least Favorable |
| Consistent with U.S. Energy Policies for Energy Dominance | Yes | Yes | No | No | No- Least Consistent |
| Impact on Crude Production | Favorable Increase-Substantial | Favorable Increase-Moderate | Negative | Neutral | Negative- Least Favorable |
| Refinery Output | Favorable Increase-Substantial | Increase-Moderate | Negative | Marginal | Negative- Least Favorable |
| Increases Days Supply Inventory-Crude Oil | Yes- Increase-Substantial | Yes- Increase-Substantial | Increase-Variable | Marginal | Negative- Least Favorable |
| Increases Days Supply Inventory-Finished Fuel | Yes- Increase-Substantial | Yes- Increase-Partial | Increase-Variable | Marginal | Negative- Least Favorable |
| Exposure to Foreign Powers | Significant Decrease-Substantial | Decrease-Substantial | Increase-Variable | Marginal | Negative-Continues to Increase CA & US |
| Economic Impact- CA | Favorable Substantial | Positive-Substantial | Negative | Negative | Negative- Job & Tax Revenue Losses |
| Employment Impact- CA | Favorable Substantial | Positive-Substantial | Negative | Neutral | Negative-Accelerates Job Losses |
| Impact on National Security | Favorable Substantial | Positive-Substantial | Negative | Negative | Negative- Severely Impacts All States |
| Supports Surge Strategy | Yes- Positive-Substantial | Yes- Positive-Substantial | No | No | No - Limits Surge Strategy & Capabilities |
| Impact on CA Consumer | Favorable | Favorable | Continuation-Highest Prices in U.S. | Higher Prices if National Situation | Continuation-Highest Prices in U.S. |

Creating the Rapid Response Fuels Reserve will require not only increased crude oil production but also increased fuel production. Both will work in tandem and will require new infrastructure and significant upgrades to existing and mothballed infrastructure. This includes opening new oil fields to production, increasing crude oil output, constructing new crude oil storage tank farms, expanding, upgrading and reanimating refinery infrastructure, and building new distillate (jet and diesel) fuel storage tank farms. Integrating and connecting additional RRFR infrastructure through new and/or enhanced pipelines will be necessary.

Based on our analysis, assumptions, understanding, and interpretation of the data, **we recommend that the POTUS adopt Option-1-Enhanced as the most viable course of action for the U.S. to follow.** Adopting and implementing Option-1 enables increased crude oil production, stimulates the construction of crude oil and fuel storage tank farms, enhances new and existing pipeline capacity, and increases in-state refinery production through targeted capacity increases at existing refiners and the creation of new refining capacity by reanimating shuttered facilities.

As discussed in the following sections, California has the crude oil reserves needed to support national security in the Pacific Command, as well as available crude oil exports that could boost its economy. **Those crude oil reserves are proven, abundant, and accessible**. The issues aren't about a lack of crude oil resources in California; they are about whether California can produce crude oil and whether it has the refining capacity to convert crude oil production into usable fuels, such as gasoline, jet fuel, and diesel, to support and sustain military operations in the Pacific Command and the overall national security interests of the U.S. The irrefutable short answers are…

i. California can readily increase crude oil production if permitted.

ii. California does not have sufficient active in-state refinery capacity to support national security interests and support U.S. force readiness in the Pacific Command, but investing in new refining capacity in Nevada and/or asserting federal jurisdiction over, and possibly acquiring ownership of idled California refinery infrastructure, as we recommend, will address this situation and reduce exposure to California regulatory impediments and interference.

iii. To ensure national security and adequate fuel reserves, federal intervention in California is necessary to build out the RRFR.

POTUS can address U.S. national security concerns and force readiness issues created by California policies and regulations by using the Defense Production Act of 1950 to direct the Secretaries of War, Energy, the Interior, and the Treasury to implement Option-1, create the California RRFR, increase crude production, build new crude and fuel storage facilities, enhance existing and build new pipelines, and expand current and build new refinery capacities in the state of California.

## 7.0 REDEVELOPING CALIFORNIA CRUDE OIL PRODUCTION AND RESERVES

### 7.1 The Potential for More California Production and the Need for Federal Intervention

As discussed previously, California's oil arsenal is still immense. California's total oil in place is on a par with Texas even though California's daily oil production is less than 10% of Texas'. Analyses by the United States Geological Survey and Bureau of Ocean Energy Management, alongside independent petroleum engineering assessments, peg recoverable crude oil in the state of California at **30 billion barrels.**[146] California's oil industry has fallen into disrepair and neglect over the past forty years primarily due to state environmental and climate policies, leading to a lack of investment and development of the state's oil fields. As aforementioned, foreign oil imports to California have grown from less than 5% to over 60% as California's in-state production has dropped by nearly 75% in that time[147] due to state laws and policies not limited to, but including:

- An offshore drilling moratorium in state waters
- A moratorium on drilling or well remediation within 3200 ft of housing (SB 1137)
- A de facto moratorium on hydraulic fracturing or acid stimulation of any well
- Obstructionist review procedures on water injection/disposal
- A moratorium on CO2-based enhanced oil recovery
- Superseding state oil and gas laws with local ordinances that ban production (SB 3233)

Federal intervention is necessary to unlock enough oil production required to refill the 20,000,000 barrels of fuel consumed in a one-month, highly kinetic Pacific Theater conflict in a reasonable time. The speed of replacement will depend on numerous factors including refinery and pipeline capacity along with incremental barrels of California crude oil production. For example, if a six-month refill using California crude were needed, it would roughly require at least an additional 220,000 barrels of oil per day (bopd) of production and a comparable amount of refining and crude oil pipeline capacity, assuming systems are running at capacity. It is recommended to increase incremental oil production past this minimum to ensure there are adequate supply buffers for the Rapid Response Fuel Reserve (RRFR), general military use, and for other California consumers.

In this section we will show specifically how, with federal intervention for military readiness and the use of standard Bureau of Land Management procedures and rules, California can dramatically increase in-state production. We have separated potential new sources of California crude based on the political/legal ease of drilling and producing in different areas of the state: areas with no current impediments to drilling and production, areas with limited impediments, and areas with major impediments.

Area 1: In remote parts of Kern County, California Senate Bill 237 has expedited drilling permits as long as they don't violate the items listed in the bullet points above. Unfortunately, companies are not ramping up drilling in these areas due to a still onerous regulatory environment. Under SB 237, a limit of 2,000 permits in Kern County was specified and projections by the California

[146] Ring, E. (2025, June 4). California's indispensable heavy oil. *California Policy Center*. https://californiapolicycenter.org/californias-indispensable-heavy-oil/

[147] California Energy Commission. (2026.). *Annual oil supply sources to California refineries*. https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/annual-oil-supply-sources-california

Energy Commission (CEC) for additional production were made claiming tens of thousands of barrels of incremental production could be achieved in a few years. As discussed in a previous work, under the current California regulatory environment, these projections will not materialize, even with SB 237 in place.[148] It appears that only around 150-200 producing wells will be drilled in 2026, resulting in just 2500-3000 bopd of incremental production according to the latest data. **Attempting to add sufficient oil production within California's current permitting regime for national security purposes, especially for a rapid response reserve, is therefore impossible.**

Area 2: Limited impediments are the areas where drilling can take place and access known and probable reserves from federal land such as Vandenberg Space Force Base near Lompoc, U.S. Coast Guard Land at Point Conception, Naval Land in Ventura County (Sections 7.5.2-7.5.2.5), Veteran Affairs Land in Los Angeles (Section 7.3.2), and Naval Land in Seal Beach (Section 7.3.4). These areas would access large reserves both onshore under non-federal lands and offshore under state and federal waters. While California would assert authority to regulate these areas and engage in lawsuits, under the Defense Production Act, we believe that it would be relatively easy to authorize activities as they would be taking place on federal and there are potential environmental benefits such as natural seepage mitigation and a reduction in air pollution and environmental damage resulting from foreign oil imports.[149] [150] These specific areas have the potential to add 100,000-250,000 bopd. Some of these areas are nearly ready to drill, while others would require acquisition of 3D seismic that could be done under a temporary (weeks) eminent domain ruling.

Area 3: Other areas of California possess the bulk of the potential reserves to increase the state's production. As shown in Figure 7.1 below, expediting in-state oil production with federal intervention could enable up to 1,135,000 bopd of oil production, however state laws and regulations would have to be preempted. While the Defense Production Act, alongside other supporting actions, could certainly be invoked to drill and produce in these areas, we think the political fallout could be more problematic, though favorable federal treatment is anticipated as reflected by the resumption of oil production in the Santa Ynez Unit and subsequent validation of the federal government's jurisdiction over critical energy assets during emergencies and for the purpose of national security.[151] Of note, there is no state law that explicitly bans hydraulic fracturing, just regulatory limitations. This potentially makes the large medium and light oil reserves of California's Diatomite and other Monterey Formation reservoirs somewhere between Area 2 and Area 3. This is highlighted in Sections 7.4 and 7.4.1.

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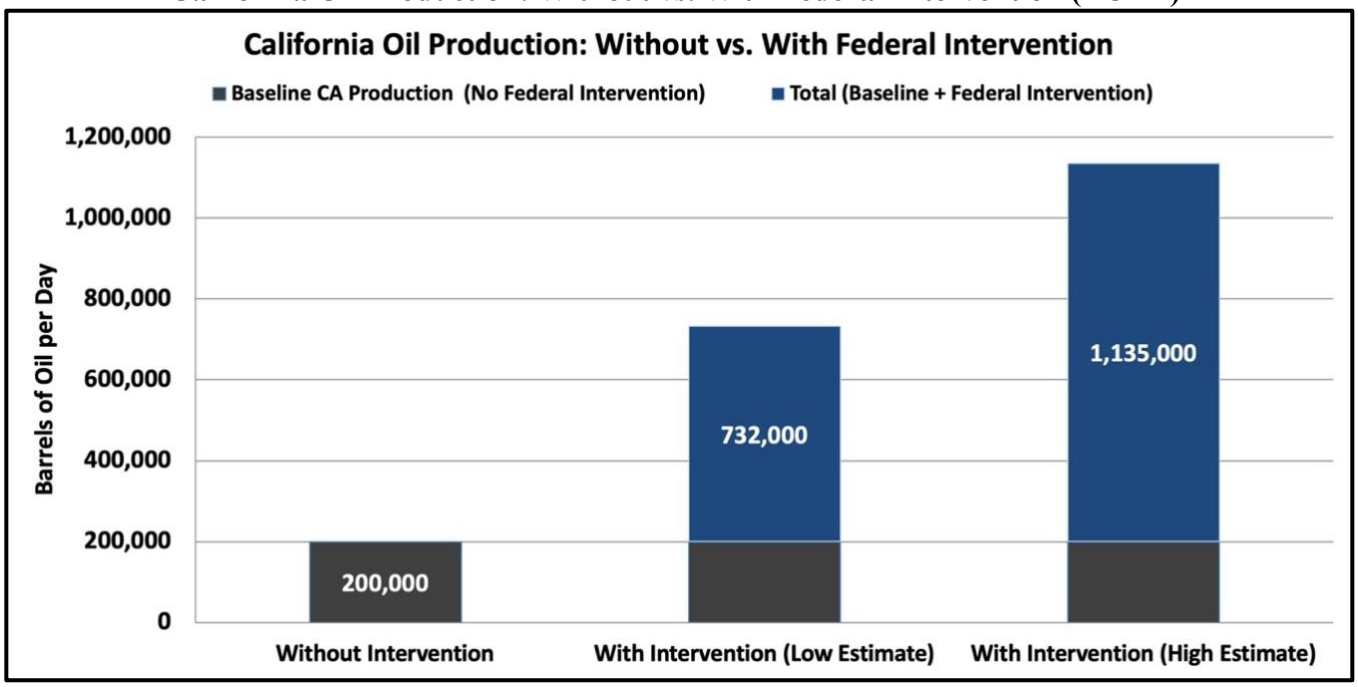
[148] Silvi, J. B., Rector, J. W., & Mische, M. A. (2025, October 31). *A study of SB 237 to stabilize oil production in California*. https://drive.google.com/file/d/1yfj8Ub2mhE9lbwZ-DLUa4A6SHN8saNhl/view

[149] Rector, J. W., Silvi, J., Mattox, J., Yeh, A., Li, J., Weir, S., & Crawford, B. (2026). Emissions from natural seeps and orphaned wells are orders of magnitude greater than fugitive emissions from oil production equipment in Southern California. *Environmental Research Communications*, *8*(6), Article 061007. https://doi.org/10.1088/2515-7620/ae68eb

[150] Peltonen, C. (2014, October 8). *Reduction in natural oil and gas seeps due to hydrocarbon production at South Ellwood Field – Platform Holly* [Conference presentation]. Prevention First 2014, California State Lands Commission. https://www.slc.ca.gov/wp-content/uploads/sites/355/2018/08/PF2014_Offshore-Reduction.pdf

[151] U.S. Department of Justice, Office of Public Affairs. (2026, September 3). *Federal court dismisses another attempt to stymie Sable Offshore Corporation's oil and gas operations* [Press release]. https://www.justice.gov/opa/pr/federal-court-dismisses-another-attempt-stymie-sable-offshore-corporations-oil-and-gas

**Figure 7.1**
**California Oil Production: Without vs. With Federal Intervention (BOPD)**



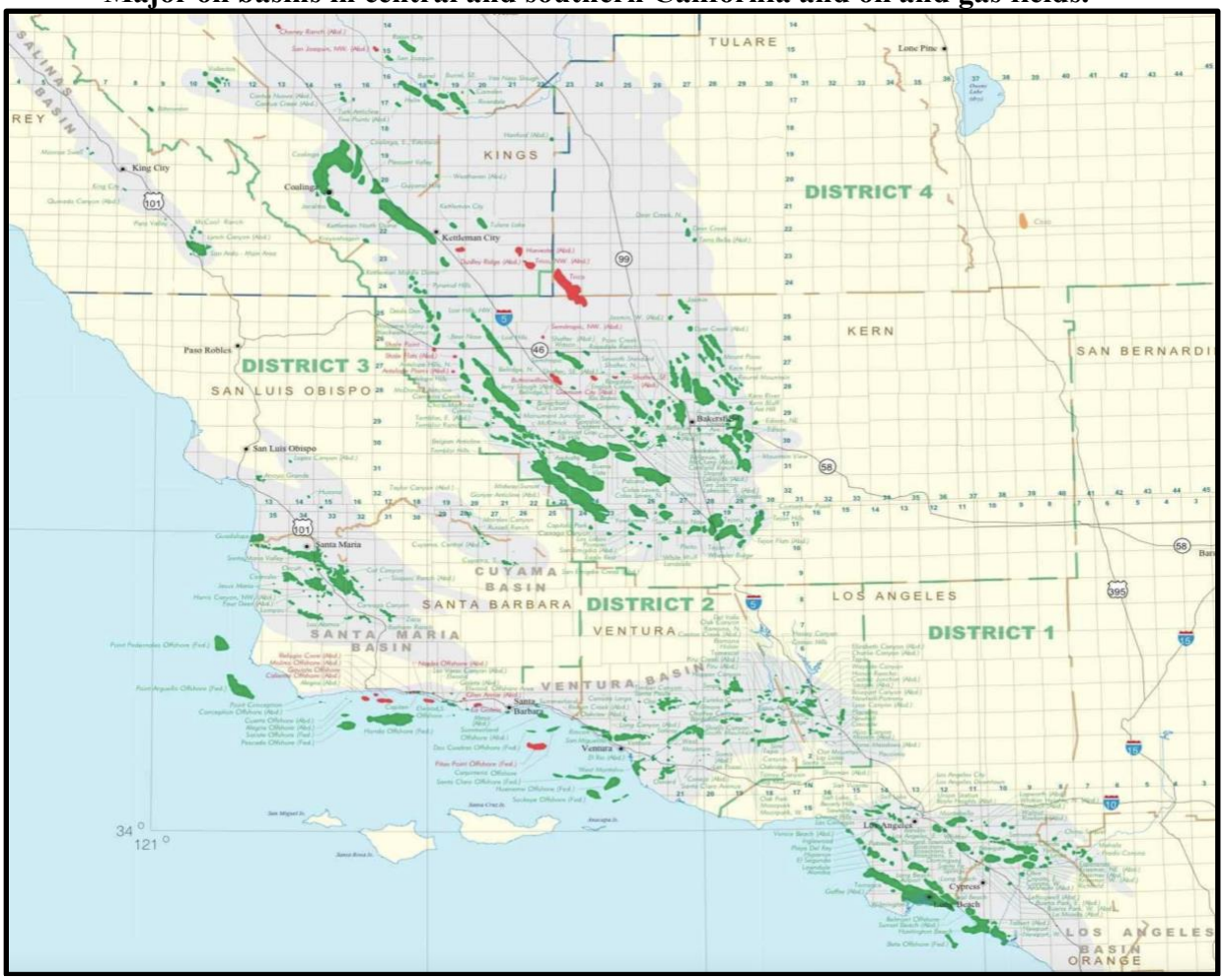

As shown in Figure 7.1 (taken from a previous paper which analyzed the impacts of potential future federal intervention on California oil production) **federal intervention could help potentially increase California oil production by over fivefold within five years. In terms of the increases in daily production, they would be comparable to the medium-term production increase targets set in Venezuela.**[152] The resources and infrastructure already exist, and modern versions of technologies such as 3D seismic, horizontal/multilateral drilling, reservoir stimulation, and enhanced oil recovery (EOR) have effectively never been exploited in many of the state's oil fields. Developing both new and existing California fields with modern technologies would ultimately enable a significant increase in production and proven reserves, especially in the areas where they have not been applied at scale.

### 7.2 Location of Major Reserves

As shown in Figure 7.2 below, California's reserves are located in six principal basins: San Joaquin, Santa Maria (including offshore), Santa Barbara-Ventura (including offshore), Salinas, Cuyama, and the Los Angeles Basin (including offshore areas and parts of Orange County). In the following sections, we will showcase detailed analyses of the potential reserves in these basins and highlight some particularly attractive areas for federal intervention.

[152] Mische, M., Rector, J., Silvi, J., & Stoker, M. (2026, June 3). *Creating California energy independence by increasing crude oil production: A call for action: The president and secretary of the DOE should issue executive orders to bring all oil and gas operations in California under the jurisdiction of the federal government pursuant to the Defense Production Act of 1950*. https://drive.google.com/file/d/1Lz-efOsVnHC1fKLFrjYILNZpafN4PsRa/view

**Figure 7.2**
**Major oil basins in central and southern California and oil and gas fields.[153]**




## 7.3 The Los Angeles Basin

The Los Angeles Basin is the most prolific oil basin in the world, containing the most oil per acre of any petroleum basin. It remains the largest mature urban oil province in the United States and still contains substantial remaining recoverable hydrocarbons within existing giant fields.[154] Despite more than a century of production, prolific Los Angeles Basin oil fields (Figure 7.3) such as Wilmington, Inglewood, Beverly Hills, Brea-Olinda, Cheviot Hills, Salt Lake, Huntington Beach, Seal Beach, Long Beach, Richfield, Santa Fe Springs, and many others possess significant redevelopment potential through horizontal/directional drilling, sidetracks, recompletions, waterflood optimization, and idle well restoration coupled with modern 3D seismic surveys and data processing.

[153] California Department of Conservation. (n.d.). https://www.conservation.ca.gov/
[154] Gautier, D. L., Tennyson, M. E., Cook, T. A., Charpentier, R. R., & Klett, T. R. (2012). *Remaining recoverable petroleum in ten giant oil fields of the Los Angeles Basin, southern California* (Fact Sheet 2012–3120). U.S. Geological Survey. https://pubs.usgs.gov/fs/2012/3120/

Most opportunities are characterized by low geologic risk, extensive existing infrastructure, and well-understood reservoirs with low lifting costs. The United States Geological Survey (USGS) estimated up to 5.6 Billion barrels of remaining recoverable oil (mostly medium and light grades), exist in the LA Basin's 10 largest fields.[155] They also reported that, inclusive of new discoveries and other fields within the basin, alongside the application of modern seismic imaging technologies and drilling techniques, **recoverable reserves of 15 billion barrels** could eventually be extracted from the Los Angeles Basin as the basin has been calculated to hold up to 50 billion barrels of original oil in place within known oil fields.[156]

Over a five-year development period, coordinated redevelopment of major Los Angeles Basin fields could add roughly 85,000–150,000 BOPD of additional incremental oil production. This range is modest relative to the USGS estimates of additional recoverable oil remaining in the basin and reflects practical constraints on drilling pace, surface access, facility capacity, and reservoir management rather than resource exhaustion. This incremental oil production would provide a stable baseline of local production strategically located in close proximity to nearby refineries. As is shown in Section 9.0, pipeline infrastructure coming from the Los Angeles Basin ultimately supplies several critical military bases such as the Edwards and Nellis Air Force Bases in addition to the Pacific Navy Fleet in San Diego among many other military installations.

Currently, new development is outlawed due to Senate Bill 1137 (which essentially bans new drilling and workovers within 3200 feet of any home or building) and local ordinances such as in the City of Los Angeles.[157] [158] If the federal government were to assert jurisdiction over the urban production facilities as they did with the Las Flores pipeline (now called the Santa Ynez Pipeline System), there are numerous fields where large redevelopment projects have been stalled that could easily resume and provide significant quantities of crude oil.[159] Oil production within the Los Angeles Basin has the advantage of being far less constrained by competing pipeline capacity with crude oil coming from the San Joaquin Valley and Central Coast regions. In other words, oil production within the Los Angeles Basin is very debottlenecked from a pipeline perspective and located in close proximity to refineries compared to crude production in other regions of California, such as the San Joaquin Basin. This is illustrated later in Sections 8.1-8.3.

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[155] Gautier, D. L., Tennyson, M. E., Cook, T. A., Charpentier, R. R., & Klett, T. R. (2012). *Remaining recoverable petroleum in ten giant oil fields of the Los Angeles Basin, southern California* (Fact Sheet 2012–3120). U.S. Geological Survey. https://pubs.usgs.gov/fs/2012/3120/

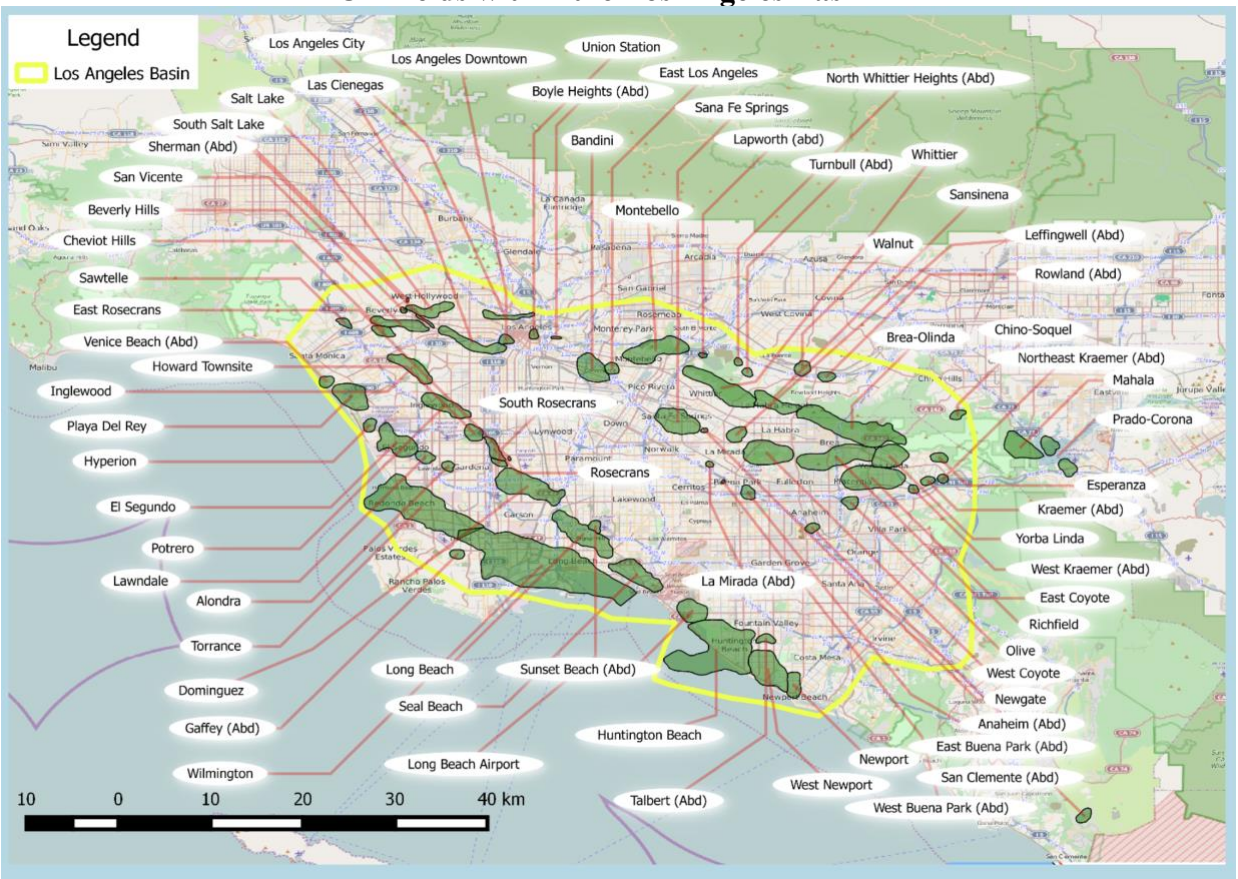
[156] Gautier, D. L., Tennyson, M. E., Charpentier, R. R., Cook, T. A., & Klett, T. R. (2012, April 22–25). Forgone oil in the Los Angeles Basin: U.S. Geological Survey assessment of remaining recoverable petroleum in giant oil fields of Southern California [Conference presentation abstract]. AAPG Annual Convention and Exhibition, Long Beach, CA, United States. https://www.searchanddiscovery.com/abstracts/html/2012/90142ace/abstracts/gau.htm

[157] *Oil and gas: Operations: Location restrictions: Notice of intention: Health protection zone: Sensitive receptors*, S.B. 1137, 2021–2022 Leg., Reg. Sess. (Cal. 2022). https://legiscan.com/CA/text/SB1137/id/2606996

[158] New York Post. (2026, June 23). LA city council votes to advance plan to phase out urban oil drilling. *New York Post*. https://nypost.com/2026/06/23/us-news/la-city-council-votes-to-advance-plan-to-phase-out-urban-oil-drilling/

[159] U.S. Department of Justice, Office of Public Affairs. (2026, September 3). *Federal court dismisses another attempt to stymie Sable Offshore Corporation's oil and gas operations* [Press release]. https://www.justice.gov/opa/pr/federal-court-dismisses-another-attempt-stymie-sable-offshore-corporations-oil-and-gas

**Figure 7.3**
**Oil Fields within the Los Angeles Basin[160]**




### 7.3.1 Wilmington-Belmont Oil Field

Wilmington-Belmont the primary medium and heavy oil redevelopment anchor for the Los Angeles Basin. It is the second largest oil field in California and fourth largest oil field in the country with nearly 3 billion barrels of oil produced to date. Gautier et al. (2012) cite a mean estimate of approximately 1,000 MMbo of remaining recoverable oil. That resource base is large enough to support a substantial redevelopment program without depending on speculative new discoveries. The five-year production target should therefore be framed as a rate-limited redevelopment case rather than a resource-limited case of approximately 15,000-40,000 barrels of oil per day (BOPD) in incremental production after five years through waterflood optimization, replacement drilling, horizontal sidetracks, recompletions, and injection normalization which is critical for preventing land subsidence in the area.

### 7.3.2 Beverly Hills, Cheviot Hills, San Vicente, and Salt Lake Oil Fields

According to a study by former USGS lead geologist Donald Gautier, the broader Beverly Hills area contains over 950 MMbo of economically recoverable oil within the Beverly Hills, Cheviot Hills, San Vicente, and Salt Lake Oil Fields, with all of these fields being minimally

[160] The Energy Consulting Group. (n.d.). *Californian oil and gas overview map*. https://energy-cg.com/USA/California/California%20Oil%20and%20Gas%20Overview.html

depleted (in the 3-15% range) and possessing extensive natural seepage.[161] The La Brea Tar Pits have the largest onshore seep rates in North America, indicative of the large hydrocarbon resource that lies beneath the surface. This area already contains several low-footprint drilling islands that could each support approximately 10-30 new, sidetracked, or reworked wells over a five-year federal contracting period. The complete project would add 20,000-50,000 BOPD within five years. As extensive 3D seismic imaging and modern drilling techniques have yet to be applied here, it is highly likely that new fields would be discovered and add significant quantities of additional crude production and reserves, in the range of several hundred million barrels. A modern 3D seismic survey could also help reveal seepage pathways and undiscovered reservoir compartments that are energizing these natural seeps. Much of this area is within a methane mitigation zone potentially indicating that seep reduction would be an additional benefit of new oil development projects as they could prevent currently ongoing natural oil and gas seepage into building basements and public spaces. Portions of these oil fields could potentially be accessed via wells directionally drilled from federally-owned land at the West LA VA Medical Center. However, to fully access the large reserves, additional drilling would have to occur from the other aforementioned drilling islands.

### 7.3.3 Long Beach Oil Field

The Long Beach Oil Field has over 400 MMbo of remaining recoverable oil. This oil field is one-of-a-kind in terms of being the most prolific oil field in the world as it holds the most oil per acre out of any oil field, bar none, containing 3.6 billion barrels of original oil in place with only about 965 million barrels produced to date. This exceptional resource base supports a meaningful but operationally distinct five-year redevelopment program built around existing low-footprint drilling islands, directional drilling, recompletions, and waterflood management. We estimate 7,500-25,000 BOPD of incremental production within five years. The Long Beach Oil Field has the advantage of already possessing a relatively modern 3D seismic survey. This survey could help accelerate the redevelopment of this world-class oil field as new discoveries have already been made within based on the 3D seismic data, but cannot be currently developed due to state policies.

### 7.3.4 Orange County Coastal Oil Fields: Huntington Beach, West Newport, and Seal Beach

These Orange County coastal fields have substantial remaining recoverable oil remaining out of up to 7.5 billion barrels of original oil in place. Huntington Beach and Seal Beach represent nearly 600 MMbo of remaining recoverable oil. Under accelerated federal administration, a five-year program using existing pads, directional wells, sidetracks, recompletions, and waterflood optimization could add around 12,500-20,000 BOPD within five years. Huntington Beach likely supplies the larger share of the EUR and production response, while Seal Beach provides lower-risk incremental redevelopment from an established producing trend. Areas of the Seal Beach oil field have the advantage of being located within Naval Weapons Station Seal Beach, meaning federal permitting could potentially help expedite development. Recent documented orphaned well leaks in Newport Beach suggest that development of the West Newport oil field could also mitigate seeps and lead to significant oil production from undrained reservoir compartments.

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[161] Gautier, D. L. (2018). *Large volumes of potentially recoverable petroleum in the City of Los Angeles* [Letter to the Los Angeles City Council]. DonGautier LLC. https://cityclerk.lacity.org/onlinedocs/2017/17-0447_misc_71_07-29-2019.pdf

### 7.3.5 Additional Major Orange County Onshore Oil Fields: Brea-Olinda and Richfield

The Brea-Olinda and Richfield oil fields have been estimated by the USGS to contain a mean value of 381 MMbo in remaining recoverable oil and up to 4.8 billion barrels of original oil in place. Redevelopment of these fields using modern drilling practices, 3D seismic surveys, and pressure support via water and CO2 floods could dramatically increase crude oil production, yielding 15,000-25,000 BOPD of incremental production. The recoverable reserves at both of these fields could also be significantly increased as extensive, modern enhanced oil recovery and drilling have yet to be applied at either of the fields and the reservoirs remain under-pressured.[162]

### 7.3.6 Other Los Angeles Basin Oil Fields

According to Gautier et. al. (2012) and Gautier (2018), many other large fields located throughout the Los Angeles Basin, most notably Dominguez Hills, Santa Fe Springs, Inglewood, Torrance, Union Station (virtually undepleted), Rosecrans, Potrero, and LA City, collectively contain roughly 1,500 MMbo of economically recoverable oil at various stages of depletion. These areas could provide an additional 15,000-45,000 BOPD within five years if a modern 3D seismic survey is conducted over these various fields. Significantly more oil production could be achieved if new fields and reservoirs are discovered based on the 3D seismic survey. Redeveloping these legacy fields could also help reduce natural seepage in the area and potentially prevent some of these fields from being liabilities as some may be at risk of having dozens of to-be orphaned wells.

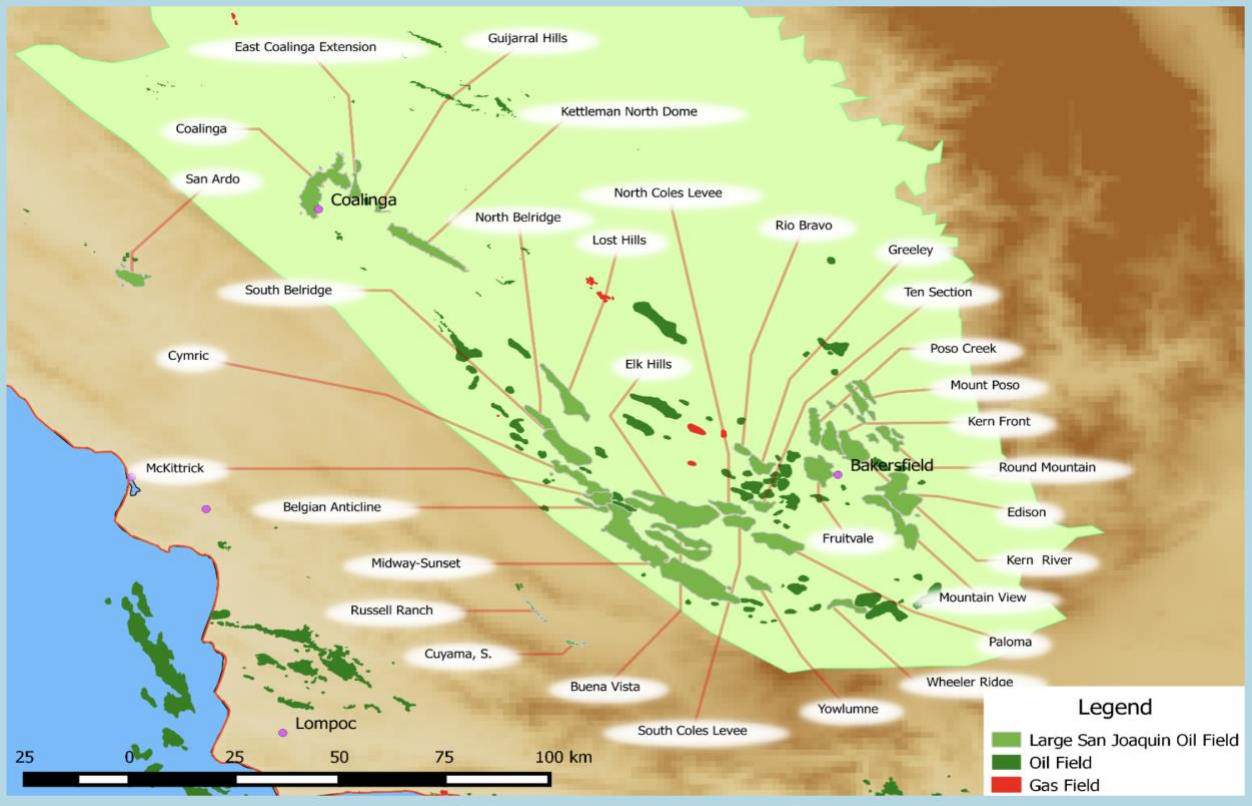
## 7.4 The San Joaquin Basin

Much like the Los Angeles Basin, the San Joaquin Basin (Figure 7.4) is considered a super-basin, having produced over 15 billion barrels of oil to date. It possesses five super-giant fields which have produced well over 1 billion barrels each. In total, the San Joaquin Basin (SJB) represents approximately **145,000-225,000 BOPD** of incremental production potential. The SJB produces over 70% of California's onshore oil, over 80% of which is currently heavy oil requiring steam flooding to enhance oil production. Developing the basin's prolific Diatomite reservoirs, which are currently unproducible due to the state's de facto hydraulic fracturing ban, could significantly increase the SJB's production of medium and light oil, adding 65,000-100,000 BOPD. Under a DPA framework, 15,000 BOPD could come online within one year and up to 100,000 BOPD could be achieved from the Lost Hills and Belridge Diatomite reservoirs.

Thousands of formation water disposal permits are also currently being held up by the state and impeding additional oil production in the SJB and statewide. Additional light oil recovery from deeper Stevens and Monterey reservoirs via CO2-based enhanced recovery, combined with heavy oil projects currently suspended in state permit purgatory, could add a further 80,000-125,000 BOPD. The combination of heavy and medium crude oils alongside lesser, but still significant light oil production, is perfectly suited for California's refining infrastructure. This will be further discussed in Sections 8.0-8.4 which detail the state's refining infrastructure. In total, USGS estimates and independent petroleum engineering analyses suggest remaining recoverable reserves of **10-20 billion barrels** across the entirety of the San Joaquin Basin.

[162] Stanford Center for Carbon Storage. (2020, July 1). *Brea Olinda CO2 capture presentation with Bridge Energy*. https://sccs.stanford.edu/news/brea-olinda-co2-capture-presentation-bridge-energy

**Figure 7.4**
**Oil Fields within the San Joaquin Basin and vicinity.**




**Note:** Oil fields with over 100 MMBO of recoverable oil are labeled and depicted in lighter green. Note that several fields are well in excess of 1 billion barrels in cumulative oil production.[163]

### 7.4.1 Westside Oil Fields

The San Joaquin Basin's Westside Oil Fields are among the largest and most productive oil fields in the nation. As shown in Figure 7.5 below, the Midway-Sunset Oil field, which has produced close to 4 billion barrels, **is the largest oil field in the Lower 48**. The South Belridge and Elk Hills (the former Naval Petroleum Reserve) oil fields have each produced over 2 billion barrels of oil equivalent as of 2026 and rank among the nation's top 10 oil fields by cumulative production.[164] These fields, alongside countless other large oil fields in the area, still hold substantial quantities of recoverable oil and gas. Uniquely, these Westside Oil Fields contain all grades of crude oil, though historically they have produced larger quantities of heavy and medium crudes. They are a combination of shallow, heavy oil reservoirs coupled with moderate-to-deep light and medium oil reservoirs in both conventional and unconventional reservoirs, many of which have been minimally developed and have yet to use today's cutting-edge drilling and development technology at scale.[165]

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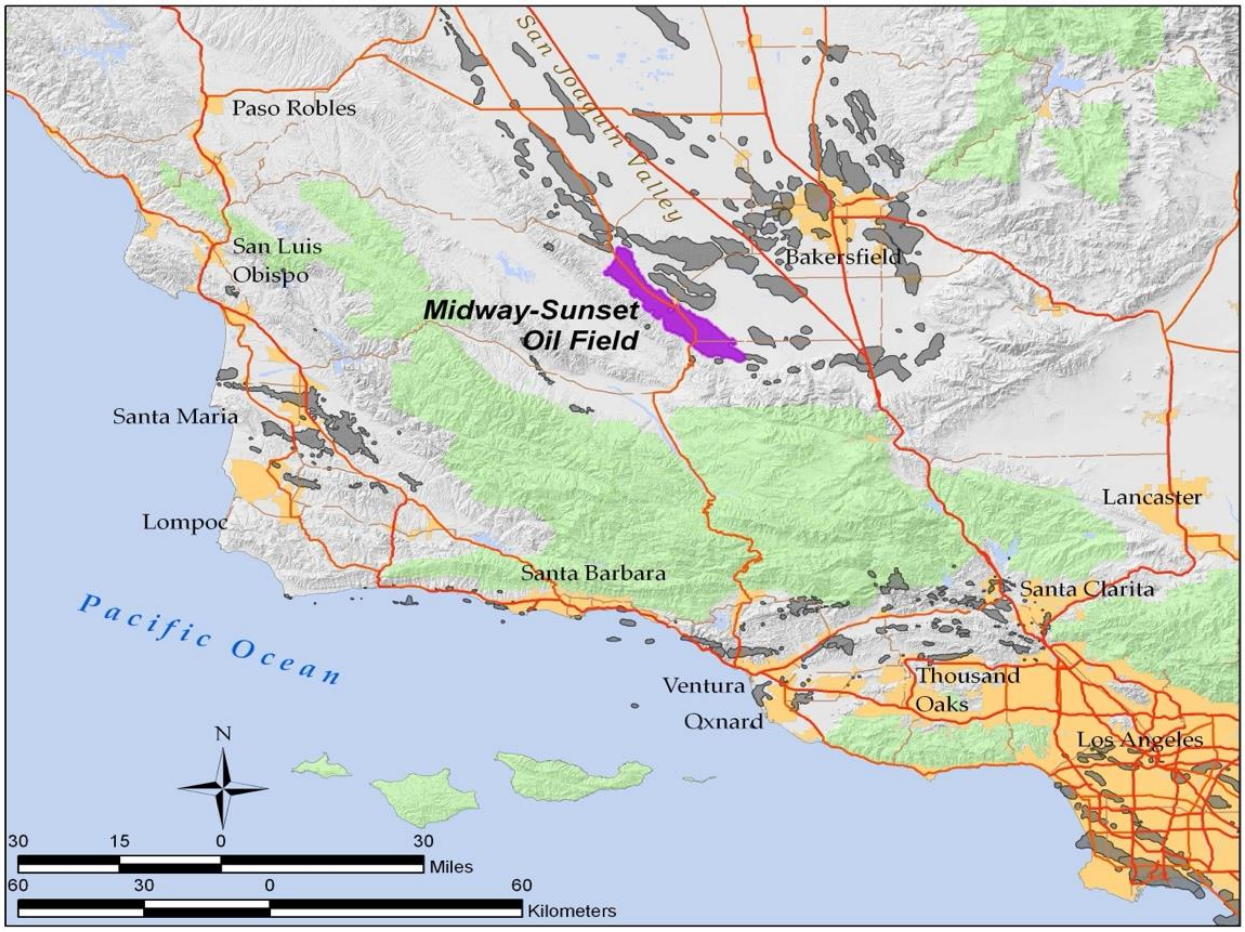
[163] The Energy Consulting Group. (n.d.). *Californian oil and gas overview map*. https://energy-cg.com/USA/California/California%20Oil%20and%20Gas%20Overview.html

[164] *Facts about San Joaquin Valley oil*. (n.d.). San Joaquin Valley Geology. http://www.sjvgeology.org/oil/index.html

[165] Tennyson, M. E., Cook, T. A., Charpentier, R. R., Gautier, D. L., Klett, T. R., Verma, M. K., Ryder, R. T., Attanasi, E. D., Freeman, P. A., & Le, P. A. (2012). *Assessment of remaining recoverable oil in selected major oil fields of the San Joaquin Basin, California* (Fact Sheet 2012–3050). U.S. Geological Survey. https://pubs.usgs.gov/fs/2012/3050/

Furthermore, enabling CO2 EOR, hydraulic fracturing and acidizing via federal intervention in the Diatomite and other deeper Monterey Formation reservoirs, such as the Antelope Shale and Stevens Sands, would enable substantial recovery of medium and light oils from these oil zones. This would be especially critical for advancing oil production at the Buena Vista, Elk Hills, North & South Belridge, and Lost Hills oil fields. These specific reservoirs within the aforementioned fields originally contained up to 20 billion barrels of medium and light oils in place, only a small fraction of which has been produced to date. Lastly, reprocessing existing 3D seismic surveys in addition to completing modern 3D seismic surveys over the region's other large oil fields with complex geology would enable the recovery of large quantities of bypassed and potentially undiscovered oil at fields with historically low recovery. For instance, the Kettleman Hills North Dome oil field, which has only produced 10-15% of its estimated 4 billion barrels of original oil in place, and fields like it would substantially benefit from these technologies.[166] The medium and lighter oils within these fields can also be transported via the KLM pipeline northbound as it cannot transport heavier, more dense crudes.

**Figure 7.5**
**Midway-Sunset oil field and nearby fields in the San Joaquin Valley.[167]**



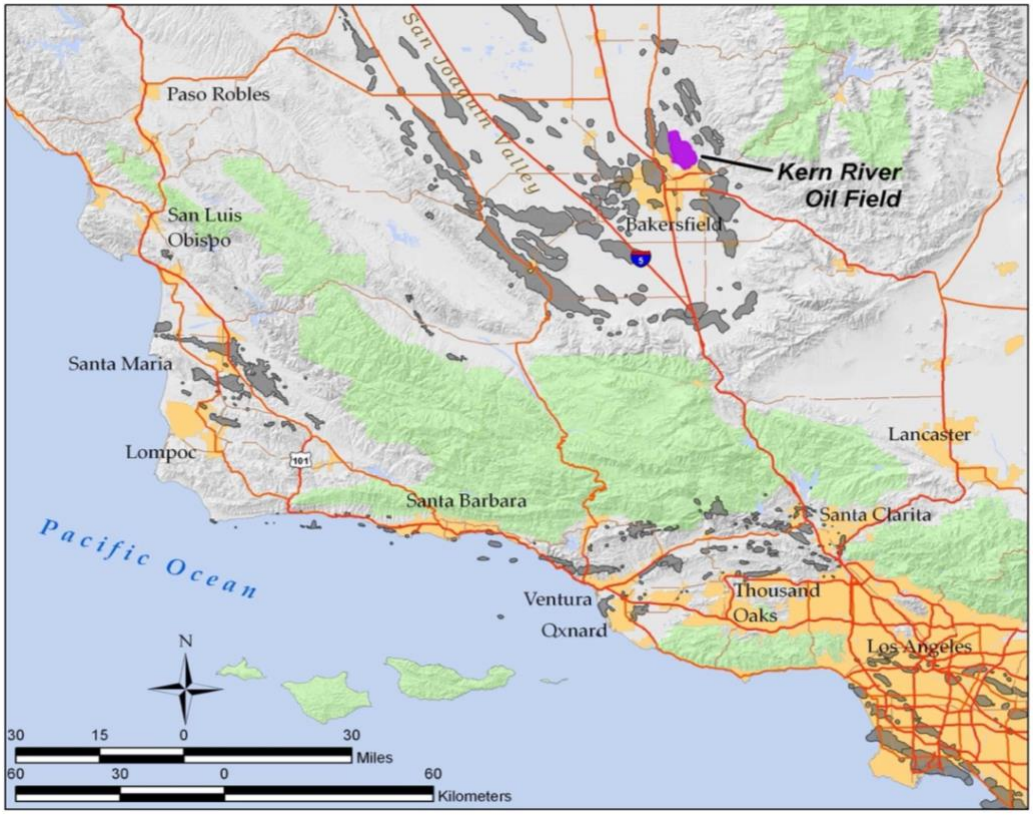

[166] California Resources Corporation. (2016, December 6). *Cowen and Company energy & natural resources conference* [Conference presentation]. https://www.shaleexperts.com/pm//viewer/829318-Cowen_and_Company_Energy_Conference-0

[167] Antandrus. (2008, February 25). *Location of Midway-Sunset Oil Field in southern and central California* [Map]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Midway-Sunset_Oil_Field_map.jpg

### 7.4.2 Eastern Kern County Oil Fields

Though not as large as the Westside Oil Fields from a total resource perspective, Eastern Kern County (Figure 7.6) hosts some of the San Joaquin Basin's most prolific oil fields. The Kern River Oil Field is arguably the crown jewel of this region as it is the third largest oil field in California, having produced nearly 2.5 billion barrels, and boasts recovery factors of over 90% from some reservoir compartments.[168] Other large fields are present in the vicinity of the Kern River Oil Field, and also further west and south, such as Mount Poso, Poso Creek, Kern Front, Edison, Fruitvale, and Greeley among others. Like the Westside Oil Fields, oil produced from these fields is predominantly heavy, although several of the fields in this area also contain medium and light oil. Redevelopment of the oil fields within Eastern Kern County using modern techniques to efficiently manage thermal enhanced oil recovery operations coupled with modern 3D seismic surveys and data reprocessing would significantly aid in the expedited redevelopment of the area's oil fields. Many of these fields were historically connected to the San Pablo Bay Pipeline by various feeder lines and the IVEC pipeline. Reactivation of the San Pablo Bay Pipeline would enable efficient transportation of the crude oil produced at many of these oil fields to move towards refineries in Northern California as currently, much of the oil produced at these fields must be trucked. This is discussed in detail within Sections 8.1-8.3.

**Figure 7.6**
**The Kern River Oil Field and Surrounding Oil Fields in Eastern Kern County[169]**

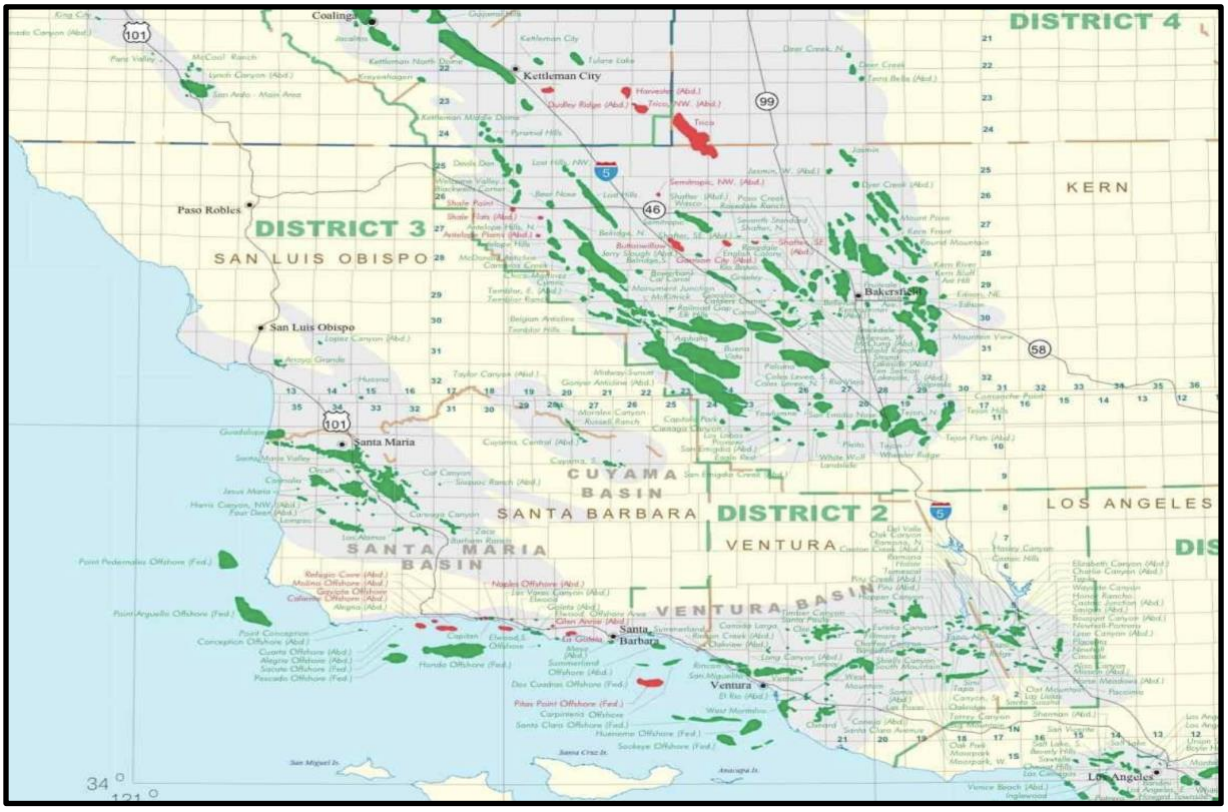



[168] McCarthy, K. (2007, December 19). Recognizing Kern River Oil Field's two billionth barrel of oil produced. *Congressional Record*, *153*(Pt. 27), 36463. https://www.govinfo.gov/content/pkg/CRECB-2007-pt27/html/CRECB-2007-pt27-Pg36463-2.htm

[169] Antandrus. (2008, February 28). *Location of Kern River Oil Field* [Map]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:KernRiver.jpg

## 7.5 Central Coast Basins

**Figure 7.7**
**Santa Maria and Santa Barbara-Ventura Basins[170]**




### 7.5.1 Onshore Central Coast Basins

As shown in Figure 7.7, onshore development in the Central Coast, comprised of the Salinas, Santa Maria, and Ventura Basins in Monterey, San Luis Obispo, Santa Barbara, and Ventura Counties, could apply modern, Canadian-style, low-footprint advanced development techniques (including multilateral wells, high-density pad drilling, and improved reservoir imaging) to increase recovery factors and well productivity, potentially allowing the region's current oil production increase significantly, adding around **55,000-85,000 BOPD** of incremental oil production. Large resources exist both onshore and offshore with nearly 8 billion barrels of original oil in place in Ventura county alone, of which less than 2 billion barrels have been produced.[171] Furthermore, substantial quantities of recoverable crude are also present in the Santa Maria and Salinas Basins within known oil fields.

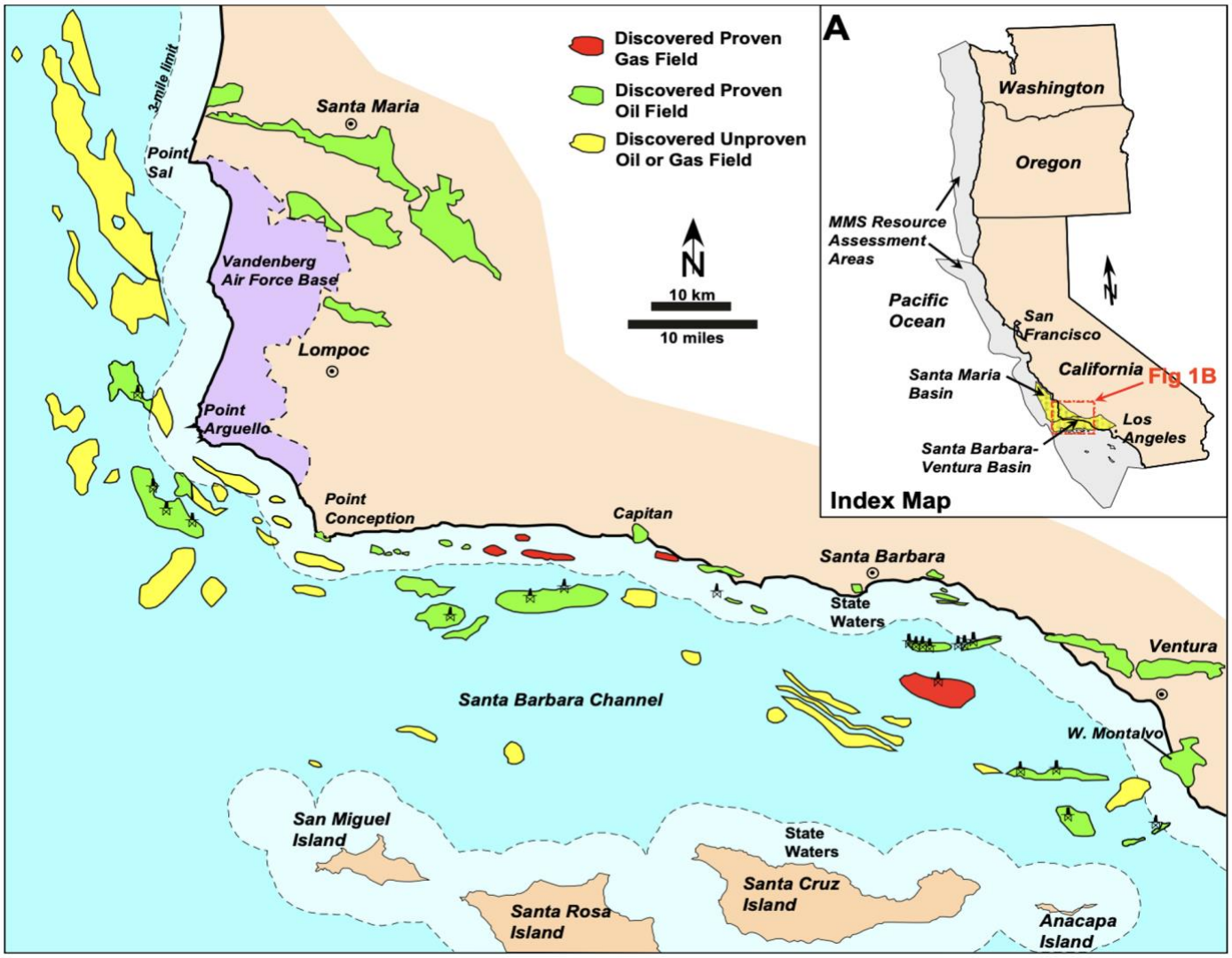
### 7.5.2 Central Coast Offshore Basins

As shown in Figure 7.8, there are substantial undeveloped or minimally developed offshore reserves in both state and federal waters (outside the 3-mile limit) in the Santa Barbara Channel, offshore Ventura, and Santa Maria Basins. The Bureau of Ocean Energy Management (BOEM)

[170] California Department of Conservation. (n.d.). https://www.conservation.ca.gov/
[171] California Resources Corporation. (2016, December 6). *Cowen and Company energy & natural resources conference* [Conference presentation]. https://www.shaleexperts.com/pm//viewer/829318-Cowen_and_Company_Energy_Conference-0

estimates over 10 billion barrels of recoverable oil in this region. Drilling technologies have advanced to the point that many of these fields can be accessed from land drilling sites and as shown there is substantial federal acreage adjacent to these fields at Vandenberg Space Force Base (VSFB) and other federal facilities along the coast.[172]

**Figure 7.8**
**Known Offshore Oil and Gas Fields in the Central Coast Region of California.[173]**




[172] Bureau of Ocean Energy Management. (2026, March). *2026 national assessment of undiscovered oil and gas resources of the U.S. Outer Continental Shelf* (BOEM 2026-012). U.S. Department of the Interior. https://www.boem.gov/sites/default/files/documents/oil-gas-energy/resource-evaluation/resource-assessment/2026-National-Assessment-Report.pdf

[173] Bjorklund, T. (2007, April 1–4). *The case for using extended reach drilling to develop California OCS reserves from onshore locations* [Poster presentation]. AAPG Annual Meeting, Long Beach, CA, United States. https://www.searchanddiscovery.com/documents/2007/07027bjorklund/images/bjorklund.pdf

Offshore development from onshore drilling and production pads located on Vandenberg Space Force Base (VSFB) and other Federal Lands could exponentially increase the current production from offshore California, adding significant incremental production to the 42,000 BOPD already coming from the Santa Ynez Unit as a result of the DPA order in March 2026.[174] [175]

Broad, aggressive new development and redevelopment across the Santa Barbara Channel and Santa Maria Basin offshore trends could potentially support incremental regional production of approximately **130,000-270,000 BOPD** over a five-year period. Including the potential for development within state waters from low-footprint onshore coastal locations, the combined production for these offshore oil fields could **exceed 400,000 BOPD**.

To reduce potential conflicts with the State of California, development using extended-reach drilling (ERD) wells drilled from surface locations on VSFB could be considered as shown in Figure 7.9 below. It is still likely that the State of California will file lawsuits, as they currently assert that all permitting must go through their regulatory agencies, such as CalGEM, even if the surface and bottom hole location of a well are within federal land.

However, by focusing on reserves accessible from VSFB, political fallout from using offshore platforms and exploiting reserves currently off limits under SB 1137 may be reduced. While an administration order allowing production beneath state waters will still be needed, we expect that California would welcome the standard 12.5-16.67% royalty that would be paid for any production with a bottom hole location underneath state waters. Moreover, it is likely that producing here will reduce the extensive natural seepage in the area, reducing methane emissions and beach tar. [176] [177]

Potential ERD projects developed on onshore federal military lands are shown in Figure 7.9. The initial fields of interest for the Rapid Response Fuels Reserve are: Tranquillon Ridge, Rocky Point, the "A" and "B" fields near Point Sal, Point Pedernales, and various fields nearby the Point Conception Lighthouse managed by the U.S. Coast Guard and Naval Base Ventura County at Port Hueneme. These fields can be developed with 10-30 wells per field using standard (10,000-40,000+ ft total well length) extended reach drilling technology. Exxon proposed development of these and other fields from VSFB over thirty years ago. Total reserves are projected at over 1,500 MMbo with peak daily production rates of over 200,000 bopd. There is also existing 3D seismic for many of the fields. With modern seismic reprocessing, additional successful 3D seismic surveys, improved reservoir delineation and well optimization, achieving high production rates for each of the fields is highly likely.

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[174] U.S. Department of Energy. (2026, March 13). *Secretary Wright directs Sable Offshore to restore the Santa Ynez unit and pipeline* [Press release]. https://www.energy.gov/articles/secretary-wright-directs-sable-offshore-restore-santa-ynez-unit-and-pipeline

[175] Sable Offshore Corp. (2026, March 14). *Sable resumes oil flow as ordered by the federal DPA with expected gross oil rate of 50,000 Bbls/d and expects first sales by April 1, 2026* [Press release]. U.S. Securities and Exchange Commission. https://www.sec.gov/Archives/edgar/data/1831481/000183148126000030/a991ex-sypspressrelease.htm

[176] Rector, J. W., Silvi, J., Mattox, J., Yeh, A., Li, J., Weir, S., & Crawford, B. (2026). Emissions from natural seeps and orphaned wells are orders of magnitude greater than fugitive emissions from oil production equipment in Southern California. *Environmental Research Communications*, *8*(6), Article 061007. https://doi.org/10.1088/2515-7620/ae68eb

[177] Peltonen, C. (2014, October 8). *Reduction in natural oil and gas seeps due to hydrocarbon production at South Ellwood Field – Platform Holly* [Conference presentation]. Prevention First 2014, California State Lands Commission. https://www.slc.ca.gov/wp-content/uploads/sites/355/2018/08/PF2014_Offshore-Reduction.pdf

**Figure 7.9**
**Potential ERD projects drilled from US Military Bases and Properties in the Central Coast Basins.**
(Taken from Bjorklund, 2007).[178]

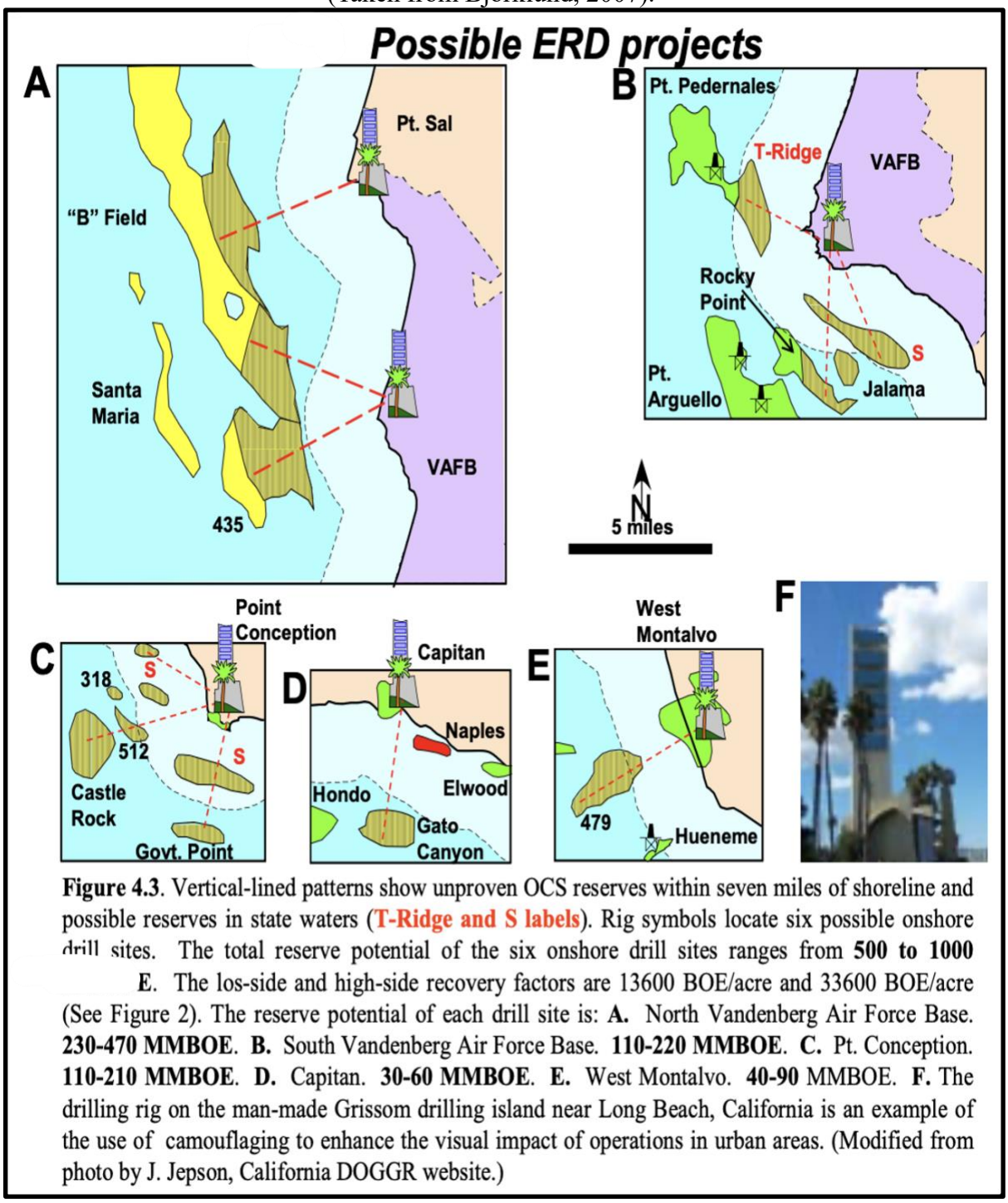


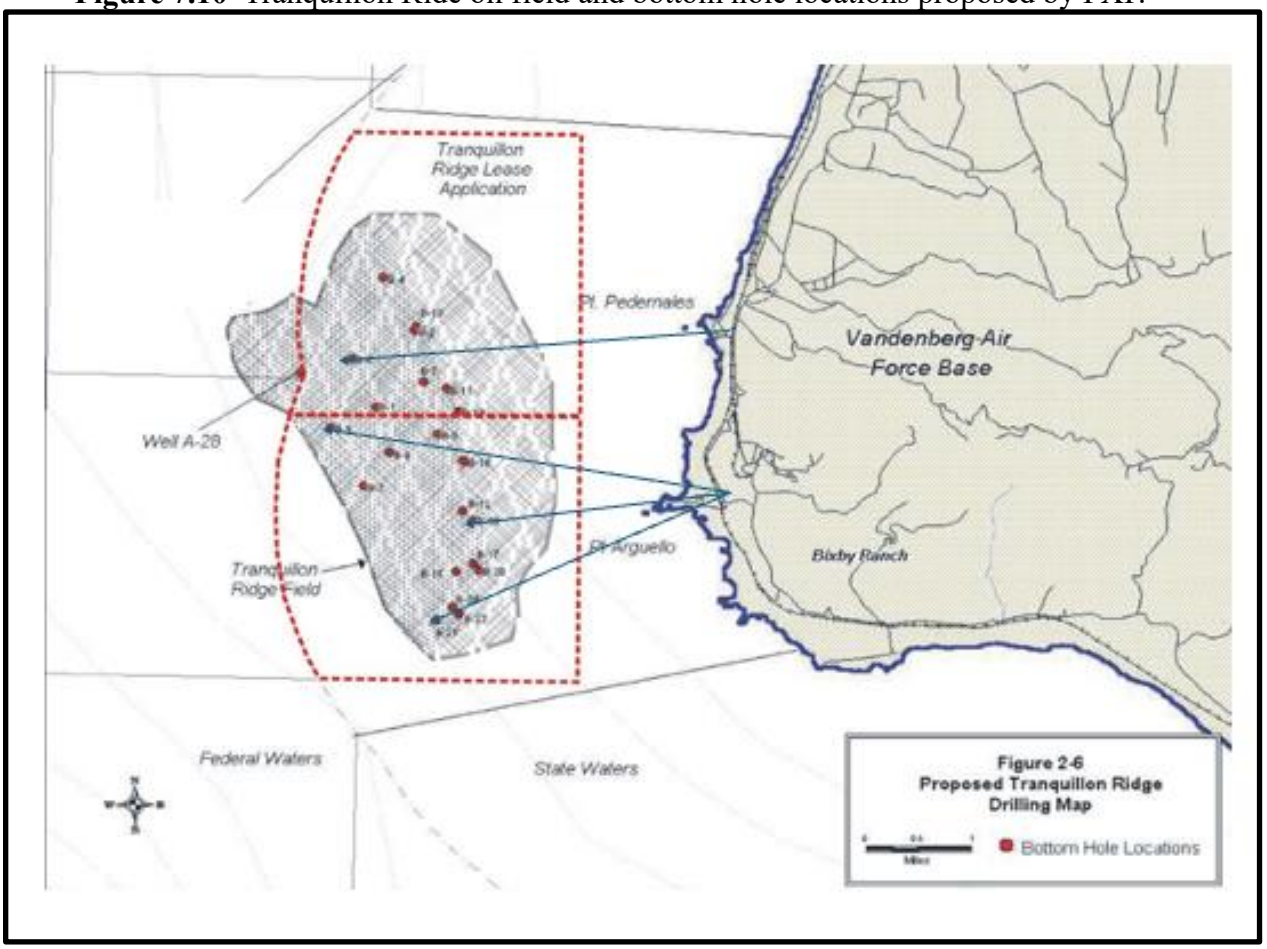

**Figure 4.3**. Vertical-lined patterns show unproven OCS reserves within seven miles of shoreline and possible reserves in state waters (**T-Ridge and S labels**). Rig symbols locate six possible onshore drill sites. The total reserve potential of the six onshore drill sites ranges from **500 to 1000** **E**. The los-side and high-side recovery factors are 13600 BOE/acre and 33600 BOE/acre (See Figure 2). The reserve potential of each drill site is: **A.** North Vandenberg Air Force Base. **230-470 MMBOE**. **B.** South Vandenberg Air Force Base. **110-220 MMBOE**. **C.** Pt. Conception. **110-210 MMBOE**. **D.** Capitan. **30-60 MMBOE**. **E.** West Montalvo. **40-90** MMBOE. **F.** The drilling rig on the man-made Grissom drilling island near Long Beach, California is an example of the use of camouflaging to enhance the visual impact of operations in urban areas. (Modified from photo by J. Jepson, California DOGGR website.)

[178] Bjorklund, T. (2007, April 1–4). *The case for using extended reach drilling to develop California OCS reserves from onshore locations* [Poster presentation]. AAPG Annual Meeting, Long Beach, CA, United States. https://www.searchanddiscovery.com/documents/2007/07027bjorklund/images/bjorklund.pdf

### 7.5.2.1 Tranquillon Ridge

Tranquillon Ridge is a proven field, but has only produced around 50,000 barrels from well A-28 with a bottom hole location drilled from Platform Irene in federal waters (Figure 7.10). Tranquillon Ridge has an estimated 90-100 Million barrels of recoverable oil from a 700 ft oil column in the Monterey at around 4000 ft vertical depth. As shown in Figure 7.9b, most of the field is located in state waters. 10,000-20,000 ft extended reach wells from surface locations 1500 feet inland from the VSFB coastline can access over 90 percent of the field. A Plains Exploration and Production (PXP) proposal indicated that 17 wells could be drilled to recover most of the reserves within 14 years with peak production rates of over 30,000 bopd. Additionally, peak gas rates of over 7,500 MCF/day would be realized. With modern horizontal drilling and completion techniques, we believe that fewer wells can be drilled to access more reserves.

**Figure 7.10** Tranquillon Ride oil field and bottom hole locations proposed by PXP.[179]

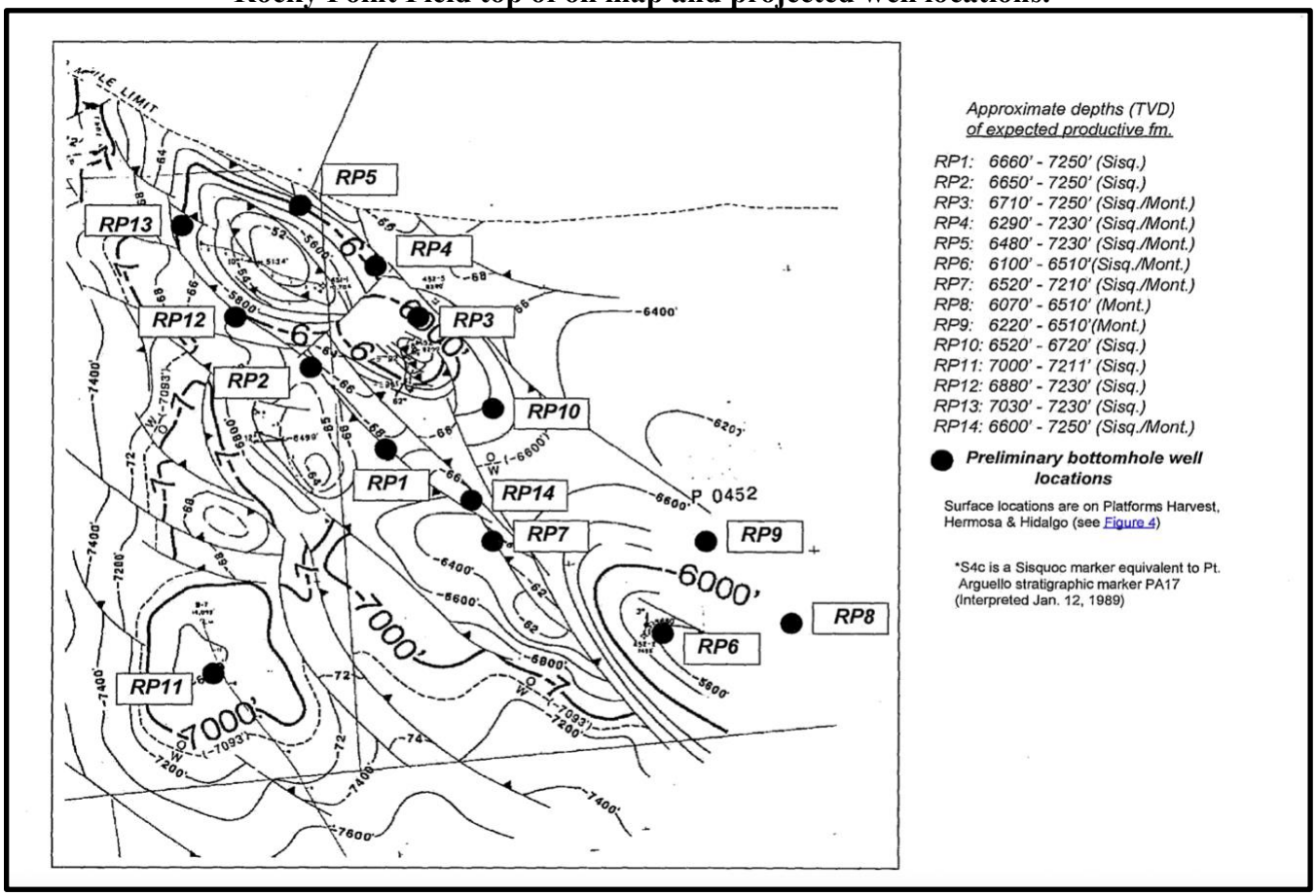



[179] California State Lands Commission. (2009, January 6). *Commission informational hearing: Tranquillon Ridge field proposed lease and development project* [Meeting exhibit]. https://slcprdwordpressstorage.blob.core.windows.net/wordpressdata/Meeting_Summaries/2009_Documents/01-06-09/ITEMS_AND_EXHIBITS/R01Exhibit.pdf

### 7.5.2.2 Rocky Point Oil Field

The Rocky Point oil field is a proven field just outside the three-mile limit delineated by 3D seismic and five exploration wells drilled by Chevron in the early 1980's. As shown in Figure 7.11, the field is located just outside state waters and 75% of the field lies within four miles of the large Point Arguello oil field. Estimated ultimate recovery is around 75-125 MMbo with peak production rates of up to 40,000 bopd from 15-20 wells. A discovery well in this field produced over 4300 BOPD and additional wells were expected to produce over 3000 BOPD each, but were never drilled. Again, with modern horizontal/extended reach drilling and completion techniques, we believe that fewer wells can be drilled to access more reserves. The nearby Jalama Field (Figure 7.9b) could also add significant reserves to this region. Development of the field is likely to reduce the natural onshore and offshore seeps it currently causes.

**Figure 7.11**
**Rocky Point Field top of oil map and projected well locations.[180]**

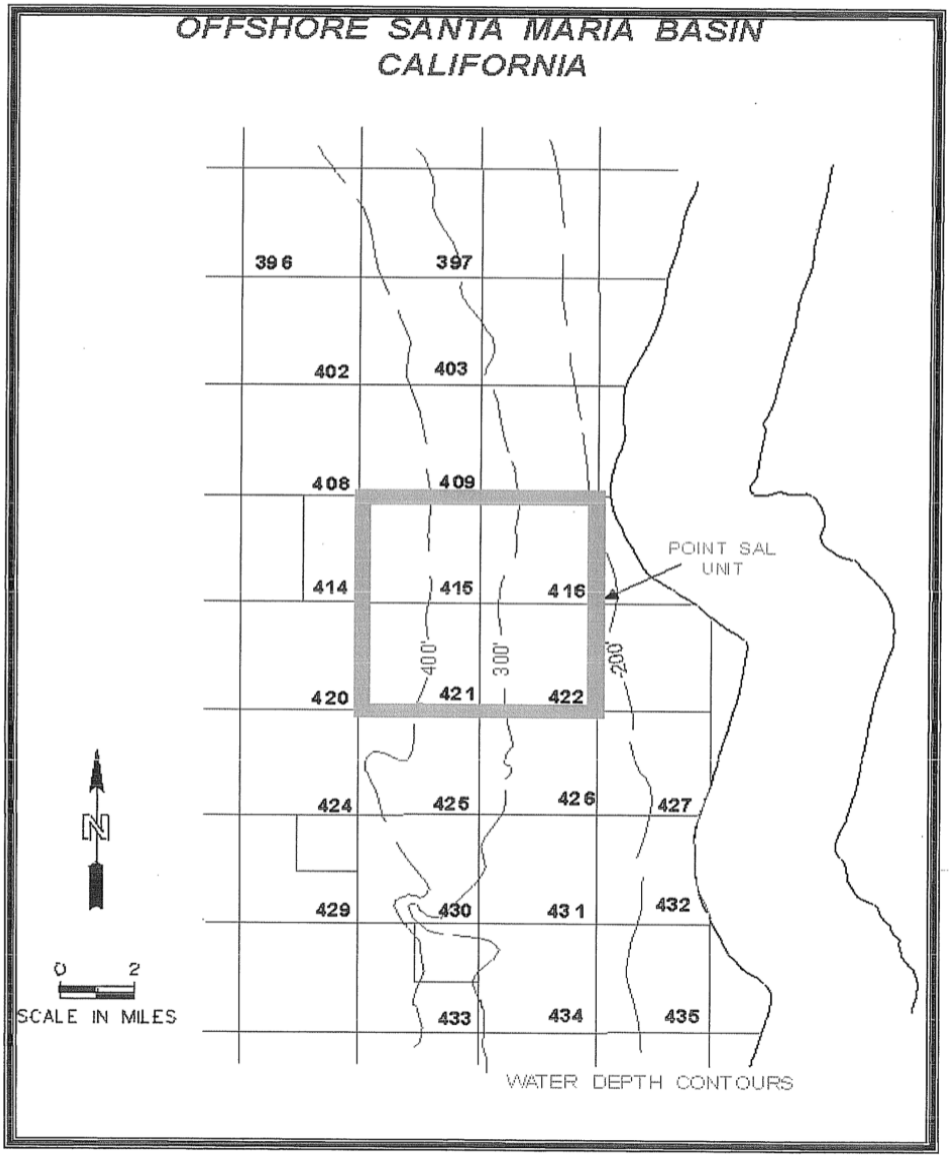



[180] Plains Exploration and Production Company. (2012, October). *Revisions to the Platform Hidalgo development and production plan to include development of the western half NW/4 of lease OCS-P 0450*. Bureau of Ocean Energy Management, Pacific OCS Region. https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Leasing/Regional-Leasing/Pacific-Region/Arguello-DPP/Platform-Hidalgo-DPP-Revison-Report.pdf

### 7.5.2.3 "A" and "B" Oil Fields

The "A" and "B" fields, which encompass the San Miguel, Point Sal, Purisima Point, Santa Maria, and 435 units, in addition to adjacent fields, contain over 1 billion barrels of recoverable oil and are directly offshore from Vandenberg Space Force Base. By completing a modern 3D seismic survey over these fields and executing a highly technical ERD program, the bulk of these reserves could be targeted and produced, potentially providing well over 150,000 BOPD. Oil produced from onshore portions of VSFB could be easily connected via pipeline to existing pipelines (which would need to be reactivated and are discussed further in Sections 8.1-8.3) in addition to possible connection to the Santa Ynez Pipeline System. Aera Energy proposed developing these fields in the early 2000s, as shown below in Figure 7.12.

**Figure 7.12**
**Proposed Development Acreage of Point Sal Unit Oil Fields offshore from VSFB.[181]**




[181] Aera Energy LLC. (2004, April 20). *Updated request for previously approved suspension of production* [Letter to P. Tweedt, Minerals Management Service]. https://www.coastal.ca.gov/energy/ocs/SRs/SOPRequestPointSal.pdf

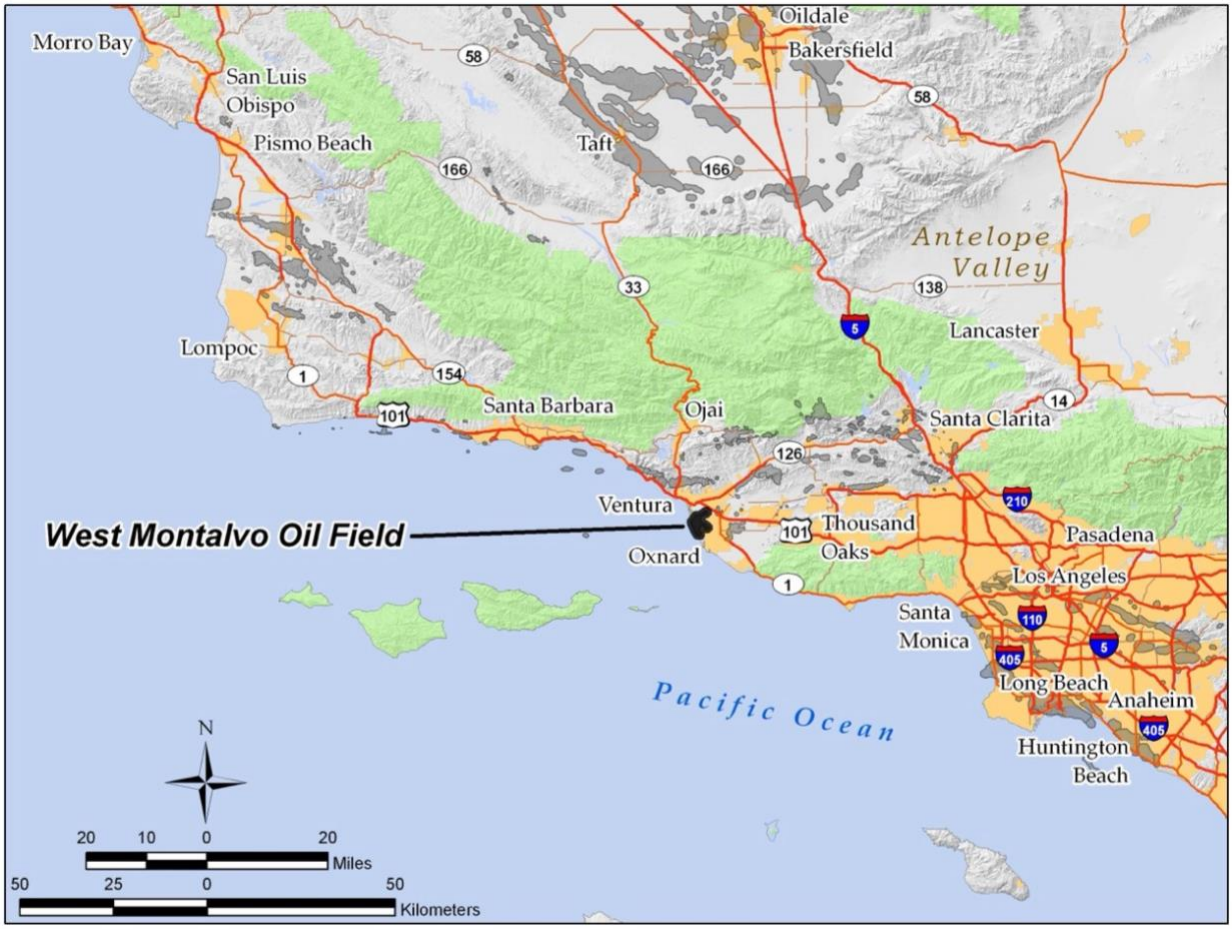
#### 7.5.2.4 Point Pedernales Oil Field

The Point Pedernales field has been shut-in since 2023 due to the idling of the Philipps 66 Santa Maria and Rodeo Refineries and associated pipeline infrastructure. Assuming that Platform Irene resumes production, the field could produce several thousand barrels per day. Reprocessing of the existing seismic survey and a modern drilling program could yield additional barrels.[182]

#### 7.5.2.5 Oil Fields Near Point Conception and Naval Base Ventura County

Several hundred million barrels of recoverable oil are present in offshore fields nearby other federal military properties such as the Point Conception Lighthouse and Naval Base Ventura County at Port Hueneme (Figures 7.9c and 7.9e). Similar to ERD-based development of offshore fields near VSFB, similar development techniques could be utilized at these sites to develop the oil fields. Dr. Bjorklund estimated that the offshore fields near the Point Conception Lighthouse and the West Montalvo oil field near Naval Base Ventura County (Figure 7.13) contain around 150-310 MMbo of recoverable oil that could be accessed from U.S. Military properties. Development of these oil fields could yield up to 75,000 BOPD of incremental production.

**Figure 7.13**
**The West Montalvo Oil Field near Naval Base Ventura County.[183]**




[182] Santa Barbara County Planning & Development. (n.d.). *Point Pedernales pipelines, Lompoc oil and gas plant*. https://www.countyofsb.org/pl-point-pedernales-pipelines-lompoc-oil-and-gas-plant
[183] Antandrus. (2010, February 5). *Location of West Montalvo Oil Field* [Map]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:MontalvoLoc.jpg

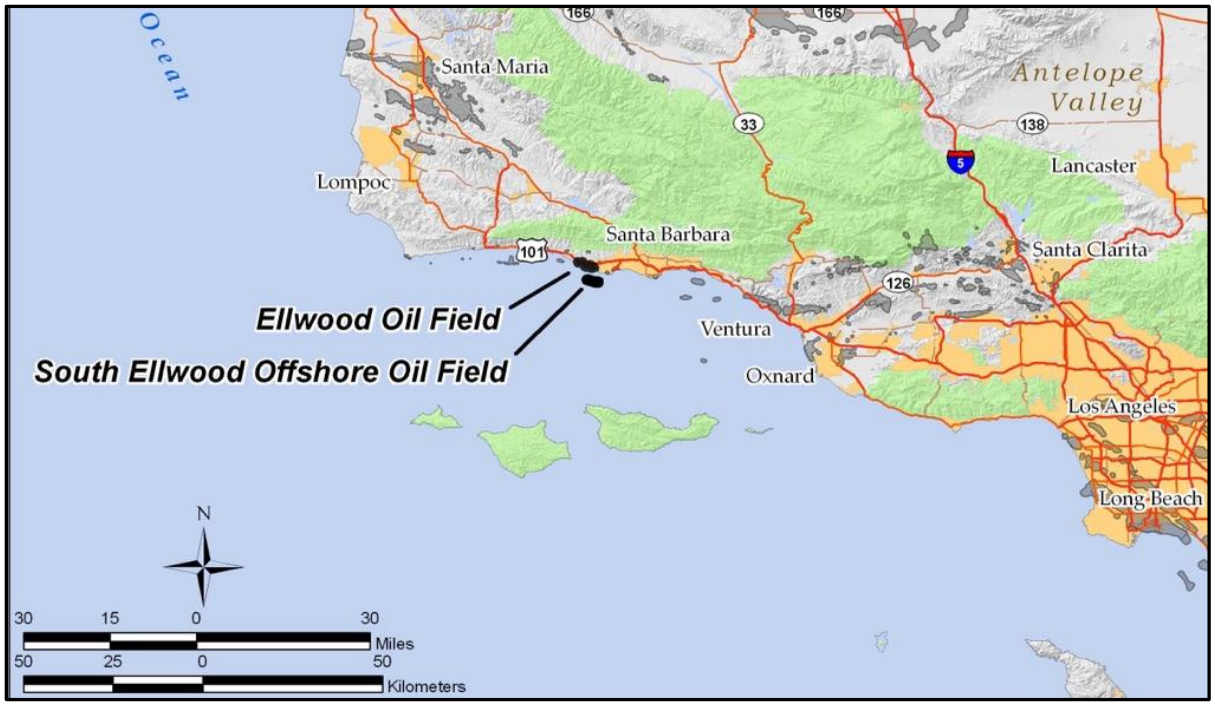
### 7.5.2.6 South Ellwood Oil Field

The South Ellwood Field is located in state waters off the coast of Goleta, as illustrated below in Figure 7.14. The field was developed from Platform Holly until 2015 when production was halted due to the Refugio pipeline leak (the same one that halted production from the Santa Ynez Unit). The state subsequently determined that no platforms in state waters could continue to operate and Platform Holly was recently decommissioned.

Much of the South Ellwood field oil remains undeveloped, with over 600 million barrels of recoverable oil remaining. Furthermore, the seeps above the reservoir are among the largest contributors to air and marine pollution in the area.[184] Historical production from the field demonstrably reduced seeps here, leading to meaningful reductions in the toxic gases and other hydrocarbons being naturally released into the ocean and air through seeps.[185]

Extended-reach drilling from land can be used to tap the reservoir today without platforms or large footprint infrastructure, and incremental production of 50,000-100,000 BOPD could be realized in five years. A new, low-footprint land drilling island and a short pipeline extension to the Santa Ynez Pipeline System would need to be constructed, in addition to federal assertion to produce within state-controlled waters.

**Figure 7.14**
**South Ellwood Offshore Oil Field Location.[186]**




[184] Peltonen, C. B., & Boles, J. R. (2015). *Hydrocarbon production from the South Ellwood Field and the effects on naturally occurring oil and gas seeps* (Search and Discovery Article #23010). AAPG. https://www.searchanddiscovery.com/documents/2015/20310peltonen/ndx_peltonen.pdf

[185] 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

[186] Antandrus. (2008, September 9). *Map of Ellwood Oil Field and Offshore Oil Field, California, United States* [Map]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:EllwoodOilField.jpg

As demonstrated, California still retains massive reserves of crude oil, both on and offshore, totaling around 30 billion barrels. The state has artificially reduced domestic production and refining of oil within its borders by means of onerous policies and regulations. This has led to a significant replacement of domestically-produced and refined California crude oil with foreign oil and refined fuel products. This has caused California to be the most reliant state on foreign oil and fuels in the nation. This effect is felt by neighboring states as Nevada and Arizona depend on California for a large share of their fuel, including their military bases, and are similarly impacted by price and geopolitical vulnerabilities to their supply of fuels.

Due to its strategic position on the West Coast, it is critical for California to increase oil production and refining capacity for the nation's military readiness. Furthermore, doing so would everyday residents in California, Nevada, and Arizona by making them less exposed to geopolitical disruptions to their fuel supplies. Lastly, increasing oil production and refining capacity in California would improve socioeconomic and environmental outcomes as foreign oil could be replaced with California crude oil, thereby stimulating jobs and economic activity alongside reducing consumer prices and environmental degradation both here and abroad.[187]

By leveraging the technological advances within the oil and gas industry that have successfully deployed in other states and countries, California can once again become a major producer of crude oil and natural gas, potentially reaching a new peak as has already occurred in many other states. **Combining California's incremental offshore oil potential of over 400,000 BOPD with the redevelopment of onshore fields could enable California to easily surpass 1,100,000 BOPD of total oil production, comparable to the medium-term proposed increases of Venezuelan oil production. This would provide a strong, stable in-state baseline alongside additional surge capacity that could be sent via pipeline to California refineries, converted into fuel, and could ultimately be depended upon by the U.S. military to reliably fuel combat operations.**

The world-class oil fields in California—those that have already been producing for decades and centuries in addition to those waiting to be discovered—are ripe for responsible, prudent, and technologically-advanced development to help bolster military fuel supply-readiness, improve environmental outcomes, strengthen the nation's economy, provide a reliable fuel supply for the West Coast, and reduce dependency on foreign imports.

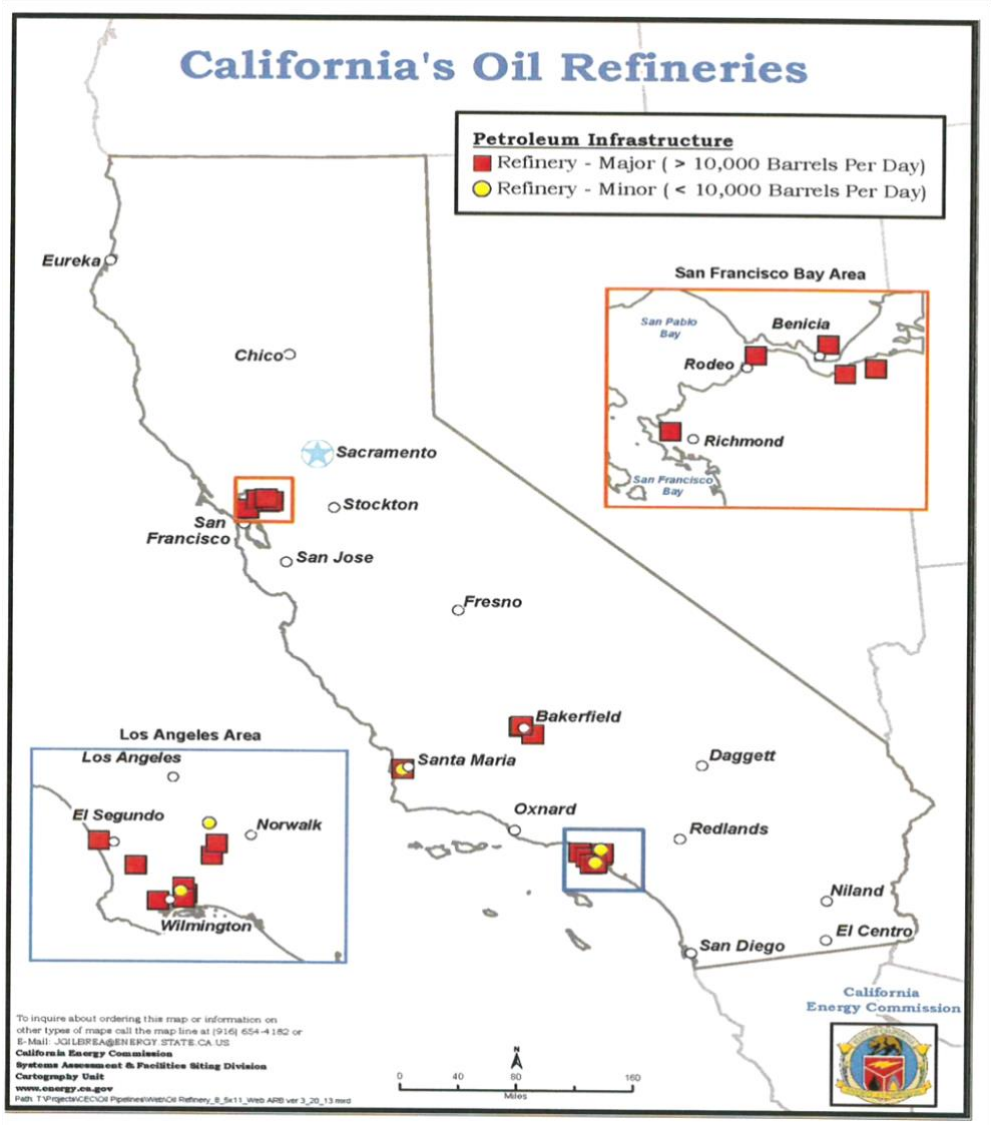
[187] Mische, M. A., Rector, J. W., & Silvi, J. B. (2025, December 1). *California's oil and gasoline conundrum: A blueprint to address California's gasoline insecurity, high prices and avert more pipeline & refinery closures*. https://drive.google.com/file/d/1m3mMURBLANnvzdHUmAjZFU3qTQp6-Y9I/view

## 8.0 TRANSPORTATION AND REFINING OF CRUDE OIL FOR THE RAPID RESPONSE RESERVE

### 8.1 The Recent Decline of California Refining Capacity and Uptick in Imported Fuels

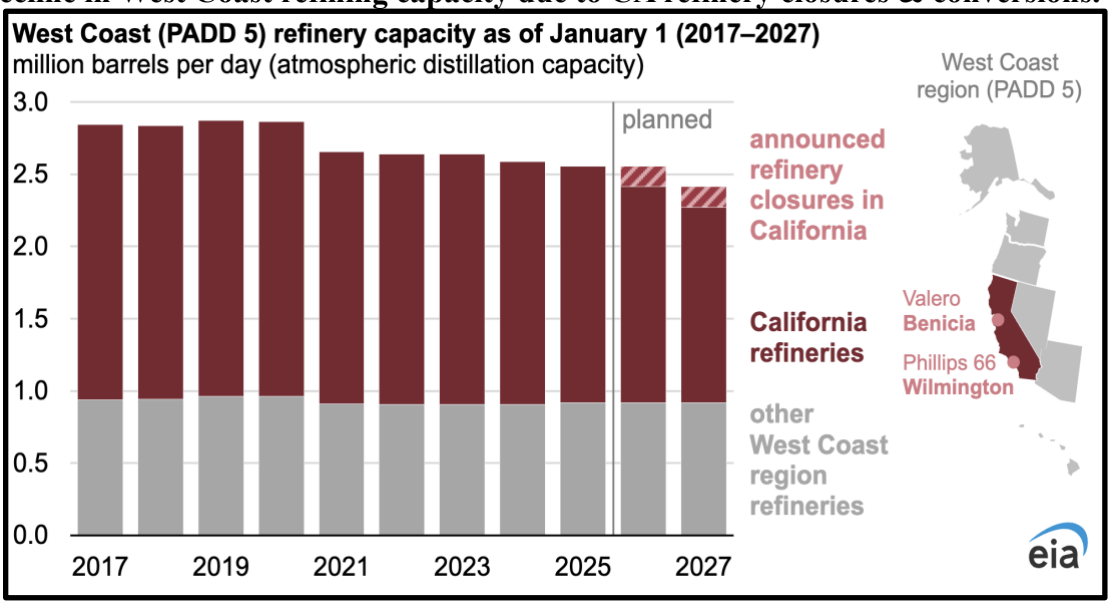
Until 2020, California, possessed refineries with a total throughput capacity of nearly 2 million barrels per day, representing the bulk of the West Coast's refining capacity (Figure 8.1). Over the past six years, four major refineries have either shut down their operations or converted to biofuels processing, and today California has a refining capacity of 1.3 million barrels per day. Critically, this reduced refining capacity is no longer able to provide California customers and its military bases with all of the necessary fuels they consume. This has led to the importing of finished gasoline, diesel, and jet fuel from foreign sources such as China, India, and South Korea. Currently California imports over 20% of its refined fuel needs.[188]

**Figure 8.1**
**California Refining Infrastructure in 2015.**




[188] California Energy Commission. (n.d.). *California's oil refineries*. https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/californias-oil-refineries

**Figure 8.2**
**Decline in West Coast refining capacity due to CA refinery closures & conversions.**[189]




As illustrated by Figure 8.2, California refinery closures and conversions to biofuels processing have significantly reduced the West Coast's (PADD 5) ability to refine crude oil and convert it into essential products for both consumers and the U.S. military, such as gasoline, diesel, jet fuel (including JP-5 and JP-8 military fuels), liquified petroleum gases (LPG), asphalt, and other products. As aforementioned, these closures and conversions have led to a structurally-tight market in California which has led to a drastic increase in the importing of already refined fuels from foreign countries. Due to the closure and conversion of three refineries in the San Francisco Bay Area over the past five years, refining capacity has shrunk disproportionately in Northern California as it has gone from five major operating refineries to just two as of April 2026.

California's reliance on Asian-sourced fuel today has created major national security issues in the event of an Asia-Pacific conflict, which could halt substantial amounts of fuel imports. Along with increasing local crude oil production, increasing California's refinery capacity is critical for national security and military operations.

## 8.2 Refining Capabilities and Sophistication of California Refineries

California has historically produced a slate of largely medium and heavy crudes, and most of the state's refineries are configured to process these California-produced crudes. Only a few refineries are configured for lighter oils, such as those produced in U.S. Shale Basins and certain oil fields within California.

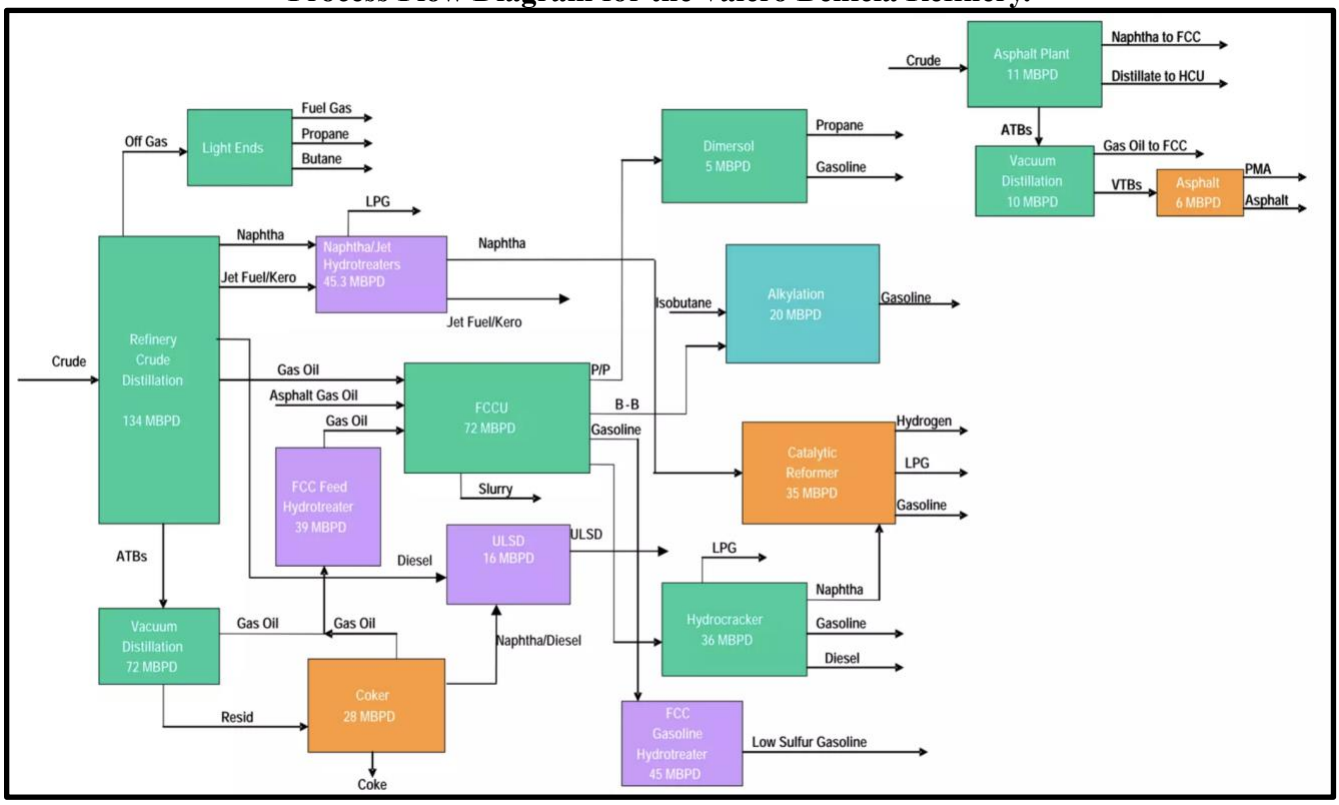
California has some of the most complex, sophisticated, and highest NCI-rated refineries in the U.S. and the world. For example, PBF's Torrance refinery, with 166,000 barrels per day throughput, and its Martinez refinery, with 157,000 barrels per day capacity, have NCI scores of 13.8 and 16.1, respectively.[190] The Valero Benicia Refinery also had a NCI score of 16.1. Chevron's

[189] U.S. Energy Information Administration. (2025, July 9). *Refinery closures present risk for higher gasoline prices on the West Coast*. https://www.eia.gov/todayinenergy/detail.php?id=65704
[190] *Refineries – PBF Energy*. (n.d.). https://www.pbfenergy.com/refineries/

El Segundo coking refinery has an NCI score of 12.62.[191] The Phillips 66 refinery that close by year-end 2025 has an NCI score of 14.1.[192] By comparison, Marathon Petroleum, which operates the largest refinery in California, has its most sophisticated and highest NCI-rated refinery in Galveston, Texas, which is rated at 15.3, and the Jurong Island I refinery in Singapore has an NCI rating of 5.8.[193] [194] Overall, and based on the available data, the average for U.S. refineries is 9.5, while European refineries have a lower average of approximately 6.5.[195]

The medium and heavy crudes produced in California require California refineries to be more sophisticated than most and use reactor units like cokers, hydrocrackers, and fluid catalytic crackers (cat crackers), all of which work together to efficiently convert the heavy portions of crude oil into clean-burning gasoline, jet fuel, diesel and LPG. A process flow diagram for the reactors and units at the recently idled Valero Benicia Refinery, which was at one time one of the country's most sophisticated refineries, is shown below in Figure 8.3.

**Figure 8.3**
**Process Flow Diagram for the Valero Benicia Refinery.[196]**




[191] kgi-admin. (2021, October 27). *Refinery profile: El Segundo coking refinery, US*. Offshore Technology. https://www.offshore-technology.com/marketdata/el-segundo-refinery-coking-the-us/?cf-view
[192] *Petroleum refineries vary by level of complexity - Today in Energy - U.S. Energy Information Administration (EIA)*. (n.d.). Www.eia.gov. https://www.eia.gov/todayinenergy/detail.php?id=8330
[193] *What is the Nelson Complexity Index? Oil 101 Podcast*. (2021, September 28). EKT Interactive. https://ektinteractive.com/podcast/oil-101-podcast/oil-101-nelson-complexity-index/
[194] sarikabandari. (2023, May 4). *Top ten active oil refineries in Asia*. Offshore Technology. https://www.offshore-technology.com/data-insights/top-ten-active-oil-refineries-asia/?cf-view
[195] Maples, R. E. (2006). *Petroleum refinery process economics*. Pennwell Corp.
[196] Valero Energy Corporation. (2007, July 9). *Valero Energy Benicia Refinery tour* [Presentation]. SlideShare. https://www.slideshare.net/slideshow/valero-energy-benicia-refinery-tour-july-9-2007/1007477

As shown in Figure 8.3, crude oil is first boiled and distilled to gather naturally-occurring gasoline, jet fuel, and diesel fractions, and then other heavier fractions further processed by vacuum distillation and other processes. The heaviest remaining portions, often referred to as vacuum residue or resid, are passed to a coker which converts these heavy portions into fuels and petroleum coke. In effect, a refinery's coking capacity roughly corresponds to the amount of heavier oil input it can handle.

Heavy oil inputs to California refineries have historically been in the range of 16-22 degrees API gravity, which results in about one-third of the barrel becoming vacuum residue. Ultimately, what this means is that the amount of heavy California crude a given Californian refinery can handle is roughly around three times its coking capacity.[197] Below are two tables showing refinery capacities and their coking capacities in Northern California and Southern California respectively. The selection of refineries shown in both tables were picked based on their operational capabilities, pipeline connections, and strategic positioning.[198]

**Major Northern California Refineries**

**Figure 8.4a**
**Crude Refining and Coking Capacities of major refineries in Northern California.**

| Refinery Name | Crude Refining Capacity (bpd) | Coking Capacity (bpd) |
|---|---|---|
| PBF Martinez | 157,000 | 48,000 |
| Valero Benicia | 145,000 | 28,000 |
| Philipps 66 Santa Maria | 44,500 | 23,400 |
| Philipps 66 Rodeo | 120,200 | 27,000 |
| Chevron Richmond | 245,300 | 0 |
| **TOTALS** | **712,000** | **126,400** |

**Major Southern California Refineries**

**Figure 8.4b**
**Crude Refining and Coking Capacities of major refineries in Southern California.**

| Refinery Name | Crude Refining Capacity (bpd) | Coking Capacity (bpd) |
|---|---|---|
| Marathon Carson | 365,000 | 104,000 |
| Chevron El Segundo | 269,000 | 72,000 |
| PBF Torrance | 166,000 | 58,000 |
| Valero Wilmington | 85,000 | 29,000 |
| **TOTALS** | **885,000** | **263,000** |

As shown in Figure 8.4a, the PBF Martinez refinery is currently the only operational refinery in Northern California capable of processing heavier grades of crude oil. Originally constructed and operated by Shell Oil, it was specifically configured to process heavier crudes produced in

[197] Oil Sands Magazine. (2026, August 4). *U.S. refineries*. https://www.oilsandsmagazine.com/projects/usa-refineries
[198] U.S. Environmental Protection Agency, Office of Air and Radiation. (2008, September 8). *Technical support document for the petroleum refining sector: Proposed rule for mandatory reporting of greenhouse gases* (Report No. 430R09112). https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1019670.TXT

California.[199] Due to in-state crude production declines, this refinery is not currently receiving any pipeline-connected crude from the San Joaquin Valley as the San Pablo Bay Pipeline is not active. All of its crude currently comes from imports. Other idled and converted refineries located in Northern California are shown in red text in Figure 8.4a.

Providing Northern California military bases with a stable supply of domestically-produced and refined fuel would require the reanimation of the Valero Benicia Refinery along with the Philipps 66 Rodeo Refinery and its sister refinery, the Santa Maria Refinery, as the two of them functioned as a pair. The Santa Maria Refinery used to partially refine heavy-sour crude from onshore and offshore Central Coast fields and sent this partially refined oil north to the Rodeo Refinery. The Rodeo Refinery was recently converted to biofuels processing in 2023 and has since stopped all crude oil processing, also leading to the closure of the Santa Maria Refinery.

Southern California, as illustrated in Figure 8.4b, possesses a much larger share of California's active refining capacity and heavy oil processing capabilities. Alongside Northern California refineries, it has traditionally been one of the main refining hubs for the medium and heavy crudes produced within the state. There is also some capacity at both Northern and Southern California refineries for lighter oils.

### 8.3 Major Crude Oil Pipeline Routes and Capacities

Due to California's longstanding history as a major petroleum producer, it has an extensive network of major pipelines as shown in Figure 8.5 below which transport oil from oil production regions to major oil refining hubs, particularly in the San Francisco Bay Area and Los Angeles Basin. Several pipelines going in each direction used to be active, carrying oil to both refining hubs. However, today, only two major southbound pipelines are active, the TVPC Line M70 gathering system owned by PBF Energy and Plains' Line 2000. Both of these pipelines are nearing their capacity limits (Figure 8.6b), leading to crude transport bottlenecking issues out of the San Joaquin Valley. This has, in part, led to very wide crude oil price differentials, which is the difference in price realized by a crude producer for a barrel of crude oil versus the going market rate per barrel. Reactivating other pipelines within the state, especially the San Pablo Bay Pipeline, is expected to help alleviate these large pricing differentials and potentially encourage further investment in San Joaquin Valley fields as stronger returns could be attained.

Once operation of the San Pablo Bay Pipeline is hopefully restored and the PBF Martinez Refinery resumes being an offtake for San Joaquin Basin crude, the system will become more balanced. As previously mentioned, reanimation of other Northern California refineries could aid significantly in facilitating additional crude output within the state. As shown in Figure 8.6a, the San Pablo Bay Pipeline has a capacity of over 210,000 BOPD. If all pipelines were operating, over 400,000 BOPD could be transported north.[200]

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[199] PBF Energy Inc. (2026, February 12). *Annual report (Form 10-K) for the fiscal year ended December 31, 2025*. U.S. Securities and Exchange Commission. https://www.sec.gov/Archives/edgar/data/1534504/000153450426000010/pbf-20251231.htm

[200] CorEnergy Infrastructure Trust. (2025, November 17). *San Pablo Bay Pipeline: CPUC discussion materials* [PowerPoint slides]. California Public Utilities Commission. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M593/K603/593603831.pdf

**Figure 8.5**
**Crude Oil Pipelines in California.**[201]


[201] California Department of Forestry and Fire Protection, Office of the State Fire Marshal, Pipeline Safety Division. (2014, January 10). *[Map of California crude oil pipelines]*.

### 8.3.1 Northbound Pipelines

**Figure 8.6a**
**Major pipelines carrying crude from Central California to SF Bay Area Refineries.**

| Pipeline Name | Pipeline Capacity (BOPD) | Origin(s)/Destination |
|---|---|---|
| San Pablo Bay Pipeline | 210,000-250,000+ | San Joaquin Valley (SJV)/SF Bay Area |
| Philipps 66 Line 200 | 93,000 | Central Coast + SJV/SF Bay Area |
| KLM Pipeline | 70,000-90,000 | SJV/SF Bay Area |
| **TOTALS** | **373,000-433,000+** | |

The San Pablo Bay Pipeline (SPB) is currently configured for about 210,000 BOPD of throughput; however, simple upgrades to the pumping stations alongside variations in crude API gravity could enable the pipeline to ship upwards of 250,000 BOPD of crude to the SF Bay Area. It is the only large common carrier pipeline with connections to Eastern Kern County oil fields via the IVEC pipeline and other smaller local lines. It also has the ability to ship oil from the Santa Ynez Pipeline System operated by Sable Offshore. Lastly, the SPB pipeline is insulated and heated, so it can ship heavy grades of crude oil.[202]

Philipps 66 Line 200 (93,000 BOPD) is connected to Line 100 (54,000 BOPD from the SJV), and Line 400 (40,000 BOPD from the Central Coast) and served as the main northbound pipeline that brought crude oil to the Philips 66 Rodeo refinery in the SF Bay Area. Note that Line 300 (48,000 BOPD) is also part of the system and historically shipped heavy-sour crude from onshore and offshore Santa Maria Basin oil fields to the Santa Maria Refinery which partially refined this oil so most of it could ultimately be shipped to, and processed by, the Philipps 66 Rodeo Refinery in NorCal.[203]

The KLM pipeline is not heated and can therefore only ship medium and light grades of crude (must be 19 degrees API gravity or higher) especially if higher throughput is wanted. Coincidentally, this pipeline, along with the SPB pipeline, was historically connected to the Chevron Richmond Refinery which can only process medium and light crude oils. Thus, upon increasing production of medium and light crude oils in the San Joaquin Valley, this oil could eventually be shipped to this refinery alongside other SF Bay Area refineries via the KLM line.[204]

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[202] Cox, J. (2026, July 8). CRC applies to buy closed pipeline linking Kern oil with Bay Area refinery. *The Bakersfield Californian*. https://www.bakersfield.com/news/crc-applies-to-buy-closed-pipeline-linking-kern-oil-with-bay-area-refinery/article_3337b061-0c04-4663-9620-a402ff3ac4b9.html

[203] Phillips 66. (2018). *Consent and first amendment to the third amended and restated limited liability company agreement of Chevron Phillips Chemical Company LLC* (Exhibit 10.6 to Form 10-K for fiscal year ended December 31, 2017) [SEC filing]. U.S. Securities and Exchange Commission. https://www.sec.gov/Archives/edgar/data/1534701/000153470118000065/psx-20171231_ex106.htm

[204] Chevron U.S.A. Inc. (2011, May 23). *Renewal Project conditional use permit application* [Application]. City of Richmond, CA. https://www.ci.richmond.ca.us/DocumentCenter/View/7207/Renewal_Project_CUP_Application_052311

### 8.3.2 Southbound Pipelines

**Figure 8.6b**
**Pipelines carrying crude from Central California to Southern California Refineries.**

| Pipeline Name | Pipeline Capacity (BOPD) | Origin(s)/Destination |
|---|---|---|
| Plains Line 63 | 60,000 | San Joaquin Valley (SJV)/LA Basin |
| Plains Line 2000 | 110,000-130,000 | Central Coast + SJV/LA Basin |
| TVPC Line M70 | 110,000 | SJV/LA Basin |
| **TOTALS** | **270,000-290,000** | |

Plains Line 2000 is also connected to the Santa Ynez Pipeline System and is currently shipping oil from the Santa Ynez Unit oil fields to LA Basin refineries. It also ships various grades of crude oil from the San Joaquin Basin. Line 63 is not yet fully operational and needs repair.[205]

TVPC Line M70 is currently owned by PBF Energy and also collects oil from sister pipelines, namely the M1 and M55, alongside other local gathering pipelines. This pipeline network is directly connected to the PBF Torrance Refinery and ships a significant portion of the San Joaquin Valley Basin's heavy and medium crude oil to this refinery.[206]

In the event crude oil production is extensively increased in the Central Coast region, especially by means of drilling extended reach wells from Vandenberg Space Force Base and Point Conception, further developing the Santa Ynez Unit, and by redeveloping the South Ellwood Oil Field, as previously discussed, existing idled infrastructure currently owned by Philipps 66 would need to be reactivated and possibly expanded. Additionally, reconfiguring a pipeline inter-connection and expansion to the Santa Ynez Pipeline System owned by Sable Offshore Corp would be advisable to increase the flexibility and capacity of the system.

The existing pipeline infrastructure owned by Philipps 66 could be restored and expanded significantly by using the existing pipeline rights of way to increase capacity beyond what currently exists to facilitate the transport of additional considerable volumes of crude oil assuming the full development of offshore oil resources occurs from Vandenberg Space Force Base, and Point Conception. The current route of Lines 300 and 400 going from the Santa Maria and Lompoc area near VSFB to the Santa Maria Refinery, in addition to Line 200, which all merge into Line 100 which ultimately brings all of this crude oil to the Rodeo Refinery, are depicted below in Figure 8.7.

There are also numerous local pipelines in the Los Angeles Basin that ship oil directly from LA Basin oil fields to southern California refineries. The overall capacity of these lines is sufficient to transport large volumes of crude oil from the various oil fields within the LA Basin in the event production is substantially increased, though some pipeline remediation may be required.

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[205] Plains All American Pipeline, L.P. (2019). *Annual report (Form 10-K) for the fiscal year ended December 31, 2018*. U.S. Securities and Exchange Commission. https://www.sec.gov/Archives/edgar/data/1070423/000107042319000004/paa201810-k.htm

[206] Perry, J. (2019, April 25). PBF Logistics to acquire remaining interest in California pipeline company. *NJBIZ*. https://njbiz.com/pbf-logistics-acquire-remaining-interest-california-pipeline-company/

### 8.3.3 Additional Idled Pipelines

**Figure 8.7**
**Existing idled P66 Northbound Pipelines and Refineries from the Santa Maria Basin and the San Joaquin Valley. Yellow circles along the pipelines are pumping stations.[207]**


To help bolster crude oil storage, additional tanks could be constructed at existing pumping stations along major crude oil pipeline corridors to supply emergency surge capacity and redundant storage in the event there are pauses in upstream oil production and/or a temporary need for additional crude throughput at refineries. In the event it is necessary, this additional capacity could supply refineries in other states if crude oil is exported from marine terminals within California should the appropriate pipeline connections be made/rehabilitated.

[207] Contra Costa County Department of Conservation and Development. (2022, March 30). *Phillips 66 Rodeo Renewed Project (County File No. CDLP20-02040)* [Conference presentation]. Contra Costa County Planning Commission. https://www.contracosta.ca.gov/DocumentCenter/View/74698/CDLP20-02040_CPC_Presentation-PDF

**Figure 8.8**
**Existing Pipeline Network From Santa Barbara County and the Santa Maria Basin**

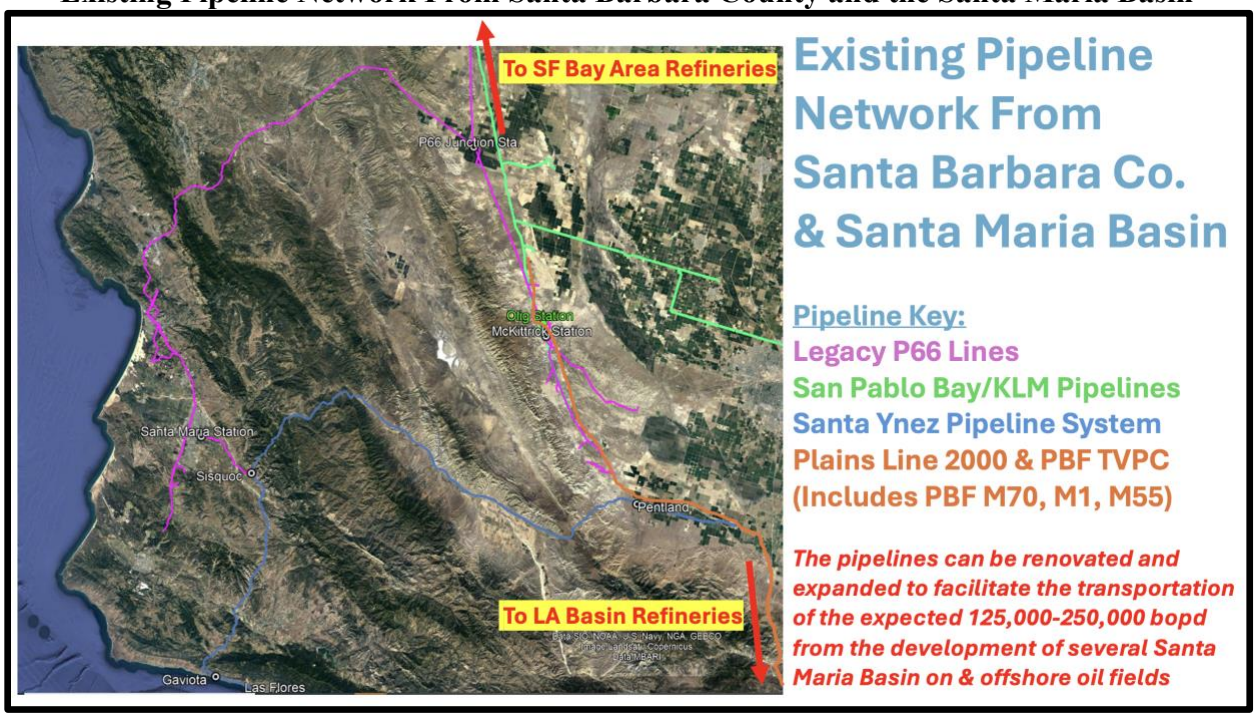


Figure 8.8 above illustrates the existing pipeline network that historically transported oil produced from onshore and offshore oil fields within the Santa Maria Basin. Additionally, it depicts the Santa Ynez Pipeline System which historically transported oil from offshore fields such as Hondo, Pescado, and Sacate (all part of the Santa Ynez Unit which is currently being produced by Sable Offshore Corporation as a result of the DPA order issued in March of 2026) in addition to the South Ellwood Oil Field via Line 96, additional offshore fields nearby Point Conception and offshore fields adjacent to Vandenberg Space Force Base.

As can be seen in the illustration, there is the potential to reconfigure some of the pipeline infrastructure at the Sisquoc pumping station to enable oil to be switched to/from the Santa Ynez Pipeline System and legacy Philipps 66 pipelines to provide additional capacity and flexibility in the event larger quantities of crude oil are produced from fields in the Santa Maria Basin and Santa Barbara Channel. As discussed previously, the pipelines could be expanded, potentially by the Army Corps of Engineers, should more pipeline capacity be required.

## 8.4 Increasing Western U.S. Refinery, Pipeline, and Storage Capacities Concept

Our analysis indicates that creating and sustaining the RRFR and operating it under surge conditions would require additional refinery capacity. The exercise of federal jurisdiction over idled refinery operations in California–and, where warranted, the acquisition of ownership interests in such facilities–represents a potentially viable mechanism for addressing the operational and regulatory challenges arising from the state's current policy environment. Because these idled facilities remain physically integrated with established pipeline and distribution networks serving military installations across the Western United States, their restoration to operational status would likely be substantially more efficient, both in terms of cost and implementation timeline, than the development of new refining capacity.

Federal jurisdiction would further afford the opportunity to supersede state-level regulatory constraints that have contributed to the idling of these assets, while preserving the value of preexisting infrastructure investment. This approach may constitute a more prudent and fiscally responsible path toward reestablishing sufficient in-state refining capacity to meet military fuel requirements than pursuing the construction of new refinery infrastructure. However, building this capacity in California would still likely result in significant litigation. An additional option we recommend is for the federal government collaborate with the state of Nevada to develop a new crude oil refinery there as it is expected that Nevada will be much more welcoming of a new refinery, though this proposition is considerably more expensive. Both of approach aligns with the President's goal of increasing American refinery capacity and may attract additional foreign investment in the U.S.

As described previously, crude oil production and refining would largely occur in California. Some refining for the RRFR could occur in Nevada. The project would take crude oil from the central valley and transport it via a new pipeline along the same route as the Kern River Gas Transmission system. To accelerate the project, the federal government would need to invoke the Defense Production Act. Nevada reduces California refinery exposure but introduces constraints related to water availability, power, and terrain. Costs to build out this new refinery and pipeline infrastructure would exceed those of simply rehabilitating existing refining and pipeline infrastructure in California, but potential litigation exposure is reduced. The Kern River gas pipeline is an operating natural-gas system; its alignment does not automatically convey rights for crude oil pipelines.

Although exceptionally early for planning and estimation, the following is offered for discussion and consideration only and is subject to significant refinement and change:

i. **Bakersfield crude hub:** Gather San Joaquin, Central Coast, and connected California crude; 14 million barrels of crude storage and 6 million barrels of product storage.
ii. **Eastbound crude pipeline:** Approximately 300 miles, nominal 20-inch diameter heated pipeline and 200,000 bpd capacity, generally following the Kern River Gas Transmission alignment from Bakersfield toward Las Vegas.
iii. **Las Vegas refinery:** Greenfield 150,000 bpd complex refinery for California medium and heavy crude, including crude/vacuum distillation, resid conversion, hydrocracking, hydrotreating, coking, hydrogen, sulfur recovery, utilities, and JP-5/JP-8, diesel, and gasoline production.
iv. **Nevada storage hub:** 9 million barrels of crude storage and 11 million barrels of finished-product storage adjacent to the refinery.
v. **Westbound product pipeline:** Approximately 300 miles, nominal 16-inch diameter and 150,000 bpd capacity, returning finished fuels to Bakersfield for connection to California distribution and military supply networks.
vi. **Distributed reserve:** At least 3 million barrels of additional crude near production/pipeline injection points and 6 million barrels of finished fuel at selected military bases and terminals.

To ensure a reliable, domestic military fuel supply in California and neighboring states, it is necessary to increase California's crude oil production and refining capacity. Refining capacity is especially critical as the state's refining capacity has declined considerably in recent years, leading to substantial imports of foreign refined fuels, including fuels for military use, and an unnecessary vulnerability to geopolitically-driven shocks.

In the event crude oil production is increased substantially in California via federal intervention for the purpose of supplying the RRFR, without sufficient in-state refining capacity, it is impossible to convert the raw crude oil into gasoline, jet fuel, and diesel. To maintain an ample supply of military fuels in the event a conflict in the Pacific Theater ensues and restricts access to imported oil and fuels, military bases and assets must be able to rely on fuels that are produced and refined domestically in California, and potentially Nevada.

Due to the disproportionate lack of refining capacity in the San Francisco Bay Area of Northern California, it would be necessary to revitalize several highly-sophisticated refineries in this region which were built to process domestically-produced crude oils, namely the Valero Benicia refinery and two Philipps 66 refineries in Santa Maria and Rodeo, which function as a pair. Doing so would help enable a reliable domestic supply of fuel for both military and general consumer needs, especially in the event of major conflict in the Pacific Theater. Construction of a new refinery and associated pipeline infrastructure in Nevada could also contribute to expanded refining capacity, though at a much higher cost than rehabilitating existing idled infrastructure in California.

**Ultimately, reinvigoration of California's oil production and refining infrastructure would greatly contribute towards national security, military readiness, and the welfare of consumers in California, Nevada, and Arizona.**

## 9.0 MOVEMENT OF FINISHED FUELS IN SUPPORT OF THE RAPID RESPONSE RESERVE

### 9.1 The Strategic Military Advantage of California-Produced Fuels

Major military installations located in California include the Pacific Fleet based in San Diego, United States Marines stationed at Camp Pendleton, Naval Base Ventura County, Naval Air Weapons Station China Lake, United States Coast Guard stations located inland and along the state's 840-mile coastline, and United States Air Force bases, including Beale, Edwards and Travis as well as the Vandenberg Space Force Base. Additional important bases are also located in Nevada and Arizona, namely Fallon, Nellis, and Luke Air Force Bases, among others, and are connected via pipeline to California refineries and fuel terminals.

California's military installations sit as the vanguard of U.S. forces directly facing potential nuclear adversaries. **Military installations in California need stable sources of fuel, which means it must be domestically produced and refined, not imported.** Forward U.S. bases cannot rely on fuel shipments or crude oil from the Middle East or on refineries in Asia to prosecute and sustain military operations. However, California has communicated its desire to rely on imports and phase out its domestic production, creating a direct and unequivocal national security threat to the United States.

Imports of finished fuels, especially from foreign nations, have steadily increased as California policies and regulations have forced refineries to close over the past decade. Figure 9.1 shows such imports prior to the closure of the Philipps 66 Wilmington and Valero Benicia refineries. Concerningly, after these refineries shuttered in November of 2025 and April of 2026 respectively, imports of refined fuels, including those for military purposes, have dramatically increased. This has further perpetuated California's structural fuel supply vulnerabilities and has exposed neighboring states to these vulnerabilities. California supplies Nevada with approximately 88% of its fuel and Arizona with around 33 of its gasoline and 50% of its diesel.[208] [209] Due to Nevada's high reliance on shrinking California-based fuel supplies, the state's government responded to the issue by forming the Fuel Resilience Committee in January of 2026. [210] [211]

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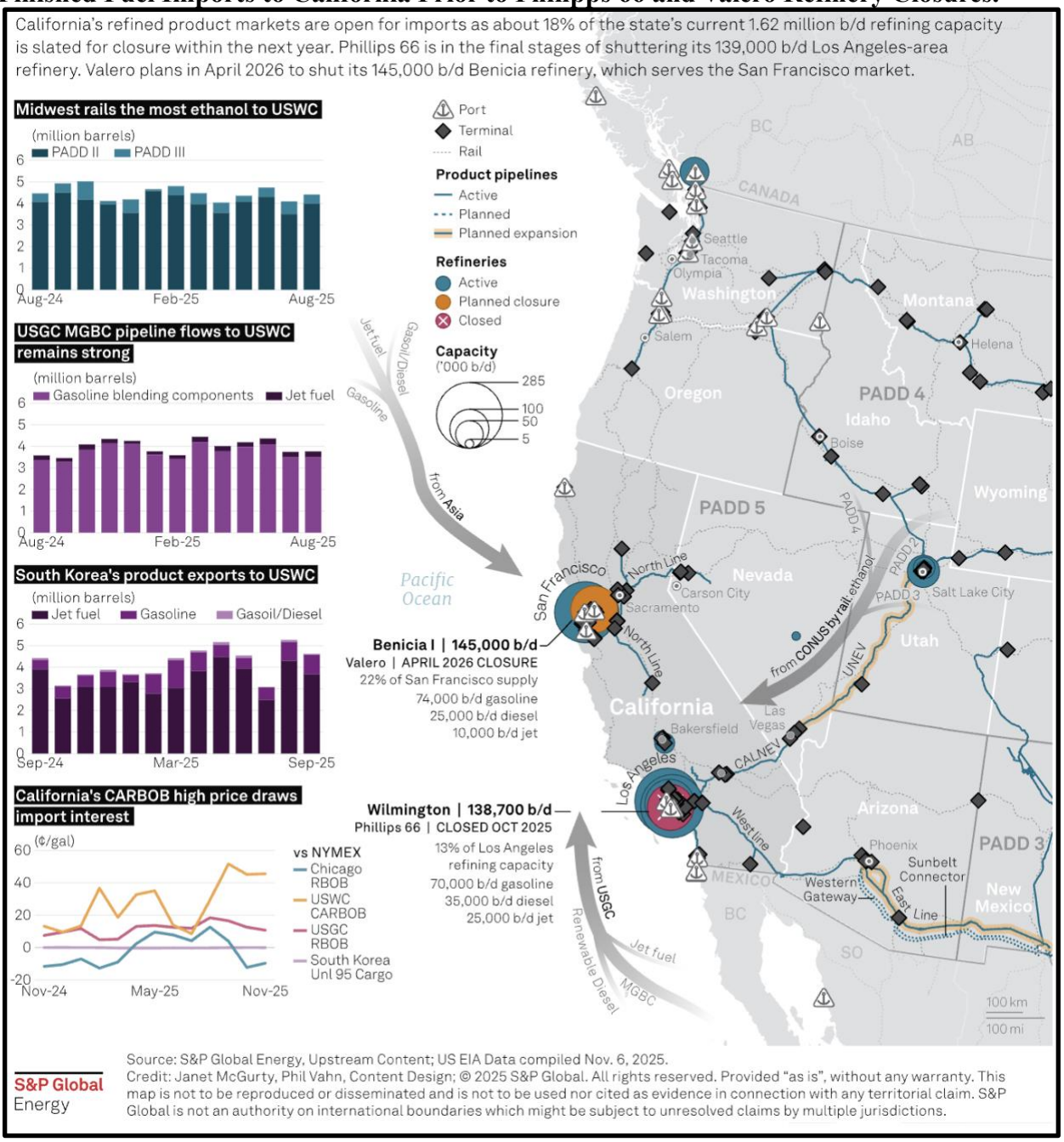
[208] E&E News. (2026, January 7). *Nevada fuel prices could soar under California fossil fuels phase-out*. Politico Pro. https://subscriber.politicopro.com/article/eenews/2026/01/07/nevada-fuel-prices-could-soar-under-california-fossil-fuels-phaseout-00712322

[209] Naveed, S. (2026, January 9). Independent fuel future critical for Arizona and Nevada, officials and industry say. *OPIS*. https://www.opis.com/resources/energy-market-news-from-opis/independent-fuel-future-critical-for-arizona-and-nevada-officials-and-industry-say/

[210] Nevada Office of Emergency Management and Homeland Security. (2026, September 8). *Fuel Resiliency Committee*. https://www.oem.nv.gov/fuel-resiliency-committee/

[211] Office of Governor Joe Lombardo. (2026, January 7). *Governor Lombardo announces appointments to Nevada Fuel Resiliency Committee* [Press release]. State of Nevada. https://www.gov.nv.gov/press-releases/governor-lombardo-announces-appointments-to-nevada-fuel-resiliency-committee/

**Figure 9.1**
**Finished Fuel Imports to California Prior to Philipps 66 and Valero Refinery Closures.**[212]




[212] McGurty, J. (2025, November 25). Infographic: California's gasoline demand met with increased global supply as refineries close. *S&P Global Commodity Insights*. https://www.spglobal.com/energy/en/news-research/latest-news/crude-oil/112525-californias-gasoline-demand-met-with-increased-global-supply-as-refineries-close

### 9.2 Critical Fuel Pipeline Networks in California, Nevada, and Arizona

Kinder Morgan is the largest pipeline distributor of finished fuel products within California. It maintains critical infrastructure that collects these products from California's refineries and import terminals and distributes these products to various fuel terminals and military bases within California, Nevada, and Arizona.

As shown in Figure 9.2 and Figure 9.3, Kinder Morgan pipelines are connected to local fuel distribution terminals which supply gas stations, in addition to major international airports in Northern California such as San Francisco International (SFO) and Oakland International (OAK) as well as major military installations, namely Travis Air Force Base, Naval Air Station Lemoore, and Beale Air Force Base.[213] Furthermore, the Reno-Sparks Metropolitan Statistical Area is reliant on fuel supplies from California via this pipeline network for essentially all of its gasoline, jet fuel, and diesel, including the Reno International Airport and Naval Air Station Fallon. Due to the disproportionately larger share of shuttered refinery capacity in the San Francisco Bay Area, both Northern California and Northern Nevada are even more reliant on imported foreign fuels than Southern California, Southern Nevada, and Arizona. [214] [215]

Figures 9.4 and 9.5 below illustrate Kinder Morgan's fuel distribution pipeline network in Southern California. The network of pipelines transports finished fuel products from refineries and import terminals in the Los Angeles Basin southward to Orange and San Diego counties as well as eastward to the Las Vegas Metropolitan Area in Nevada and to Phoenix, Arizona. Critically, this fuel distribution network supplies several major West Coast military installations, namely Edwards Air Force Base, which is the largest U.S. Air Force base in the West Coast, in addition to Marine Corps Air Station Miramar, Naval Base San Diego, Naval Base Point Loma, Naval Air Facility El Centro, Creech Air Force Base, Nellis Air Force Base, Marine Corps Air Station Yuma, and Luke Air Force Base.

Because these pipeline networks and terminals possess large quantities of tank storage, it would be technically feasible to add additional storage at some of these sites, with some being more logistically challenging than others. Just as additional crude oil storage could be placed along existing pipeline corridors, the equivalent could be done for finished fuels. This could be especially useful for military fuels, such as JP-8 and JP-5 jet fuel, in the event surge capacity is needed. Since most of these fuel distribution pipelines transport different fuel in batches, normal fuel shipments could be temporarily interrupted to ship these military fuels to bolster on-base and at-sea fuel supplies in the event it is necessary.

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[213] Stein, R. (2026, September 4). California is handing control of its fuel supply to foreign refineries. *Heartland Institute*. https://heartland.org/opinion/california-is-handing-control-of-its-fuel-supply-to-foreign-refineries/

[214] Alonzo, A. (2026, January 4). California's quest to phase out fossil fuels could make Nevada gas prices soar. *The Nevada Independent*. https://thenevadaindependent.com/article/californias-quest-to-phase-out-fossil-fuels-could-make-nevada-gas-prices-soar

[215] Solis, J. (2026, January 20). Nevada taking steps to wean itself off California fuel dependency. *Nevada Current*. https://nevadacurrent.com/2026/01/20/nevada-taking-steps-to-wean-itself-off-california-fuel-dependency/

**Figure 9.2**
**Major Northern California Refined Fuels Pipelines.[216]**

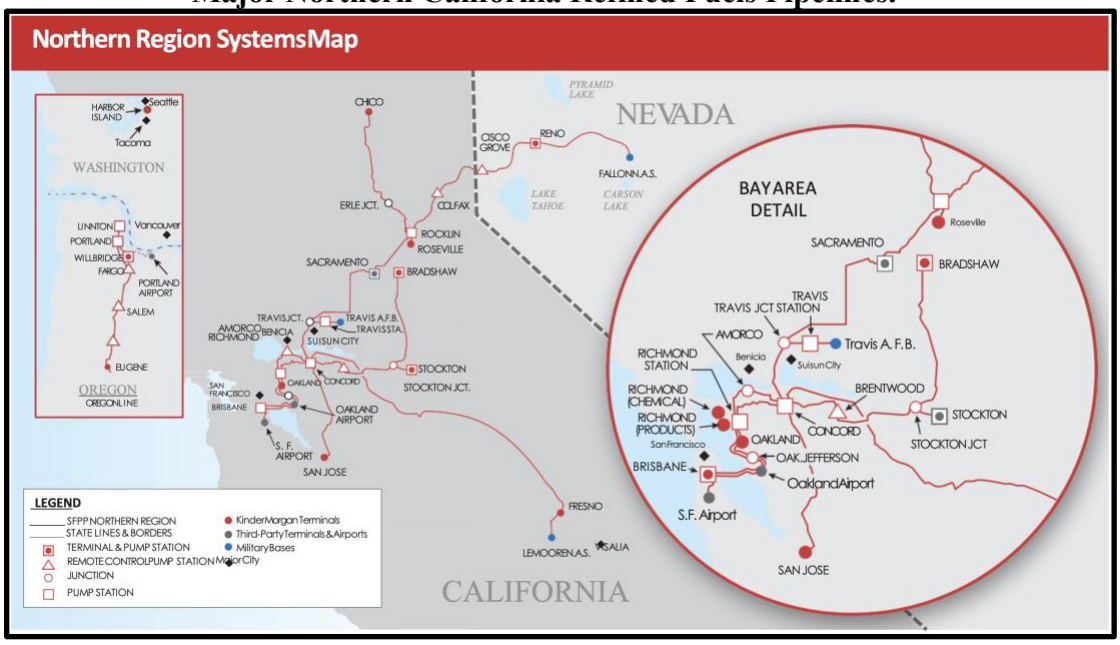
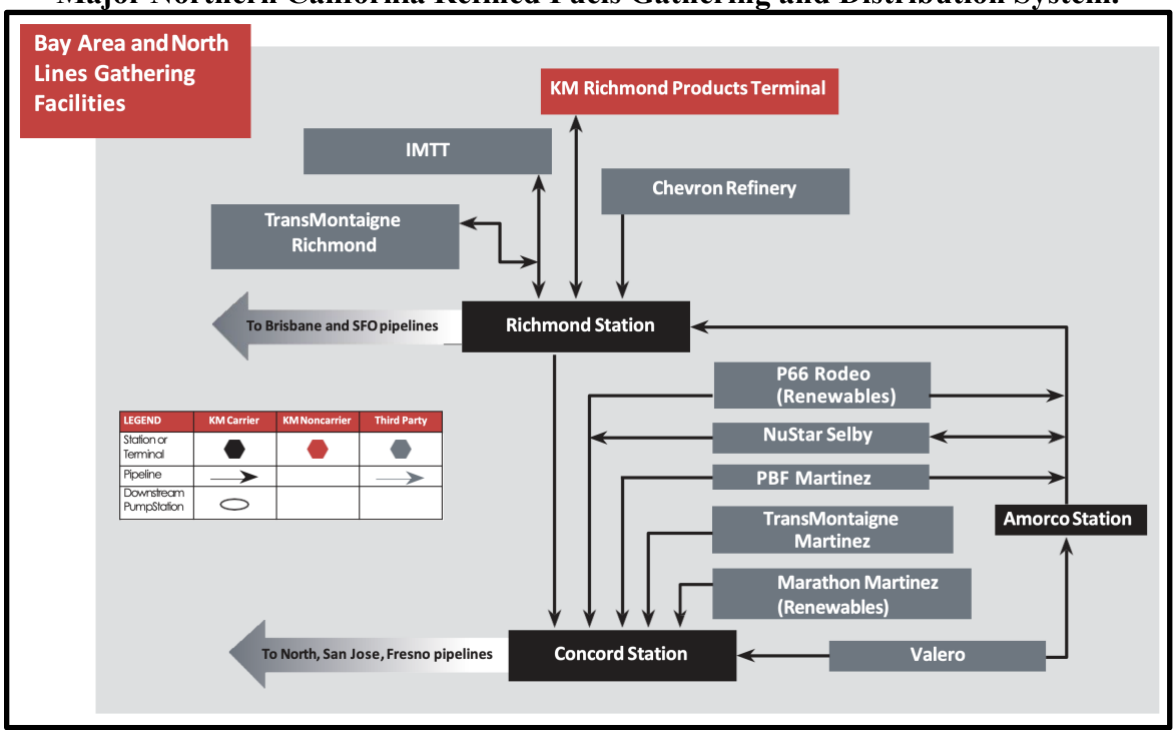



**Figure 9.3**
**Major Northern California Refined Fuels Gathering and Distribution System.**




[216] Kinder Morgan. (2025, March). *Pacific operations* [Brochure]. https://www.kindermorgan.com/WWWKM/media/Documents/2025-March-Pacific-ops-brochure.pdf

**Figure 9.4**
**Major Southern California, Nevada, and Arizona Refined Fuels Pipelines.**

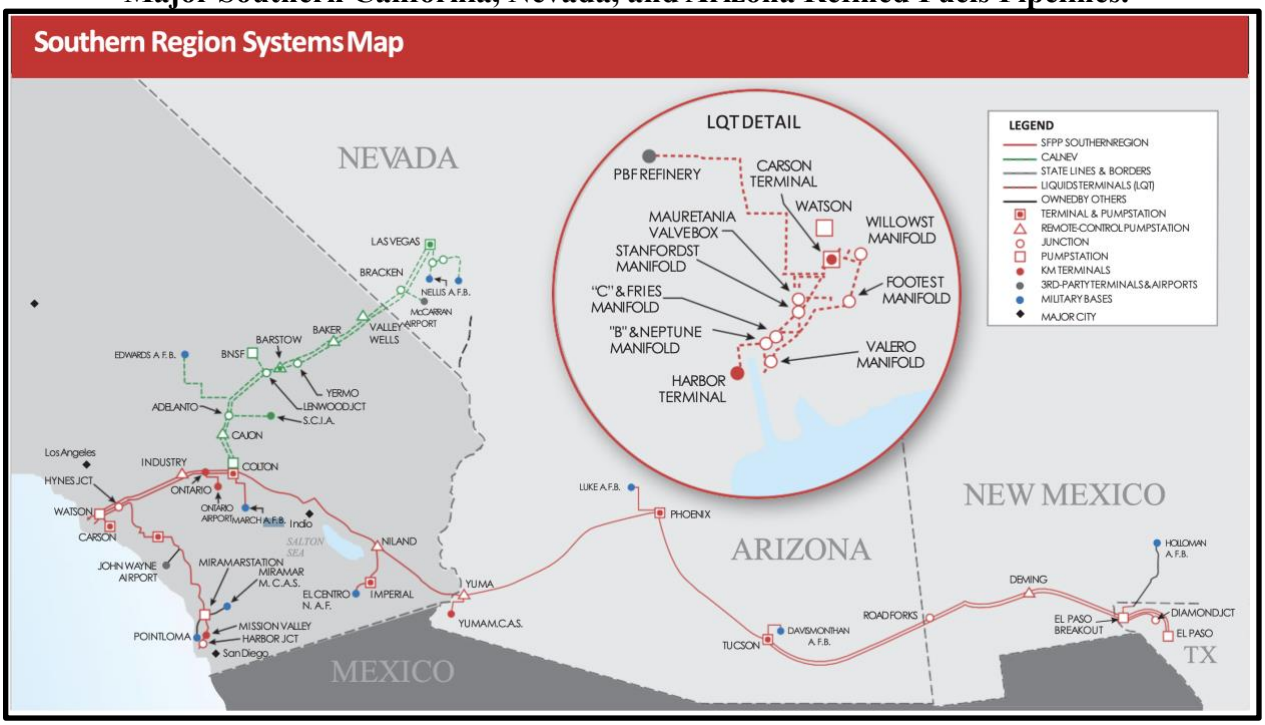
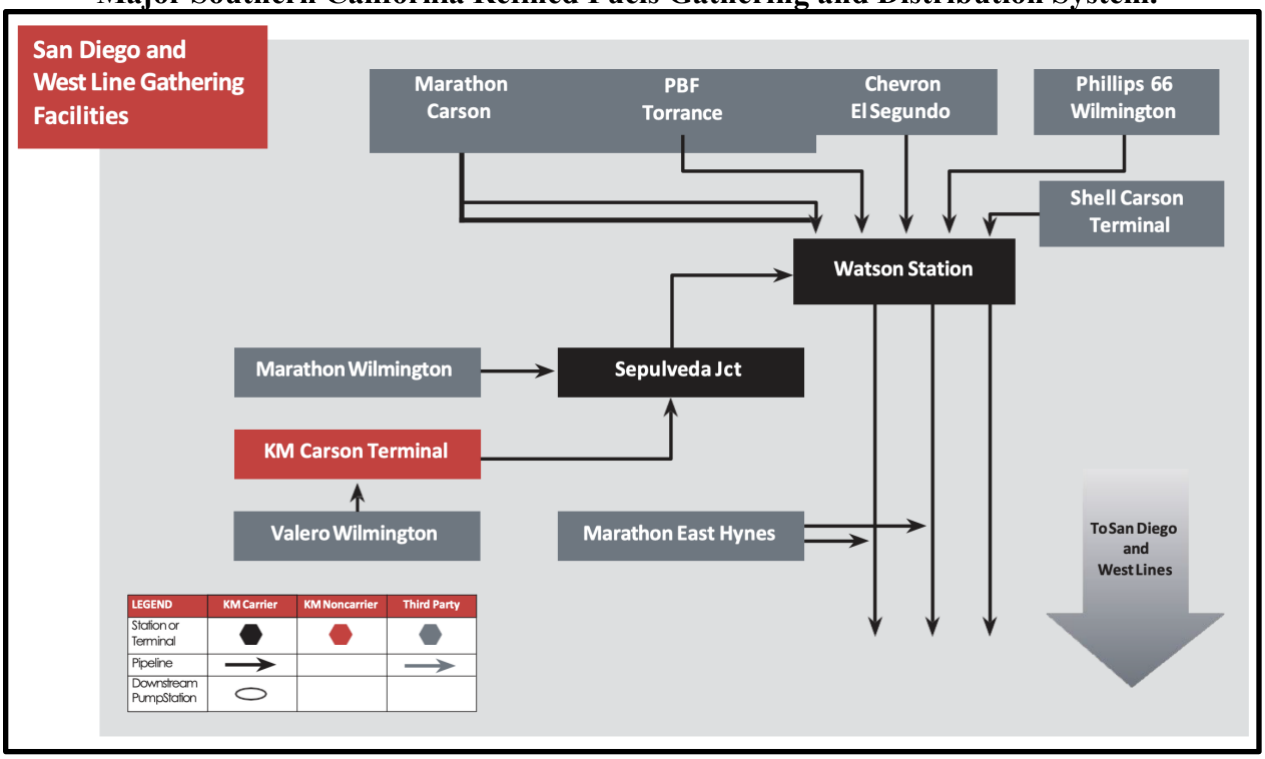



**Figure 9.5**
**Major Southern California Refined Fuels Gathering and Distribution System.**



Because the United States maintains strategic military installations and assets in California and neighboring states, **it is crucial that they have access to a reliable, fully-domestic fuel supply.** By leveraging existing oil fields, refining infrastructure, and distribution pipeline networks in California, West Coast military installations can be supplied with fuels produced and refined in California. In the event an extensive conflict occurs in the Pacific Theater, relying on California's fuel supply strategy as it currently stands would prove ineffective and endanger the efficacy of West Coast military operations. This would be especially amplified if routes bringing imported fuels to California from Asia, the Middle East, and Atlantic were hampered or fully impeded.

Therefore, **to prevent military assets and installations in the West Coast from being subdued by means of fuel supply vulnerabilities and interruptions caused by California's current import-dependent model for crude oil and finished fuels, it is necessary for California's oil production and refining infrastructure to be reinvigorated and strengthened.** This would ensure the United States Military has reliable access to a stable supply of fuel should a major conflict occur in the Pacific Theater and require West Coast assets to be deployed and continuously fueled at high rates. Much like California oil fields and refineries supplied United States Military assets as well as the Allied Forced during World War II, California could again aid in strategically supplying the United States Military with a dependable supply of fuel.