Sheila de la Guerra Public Comment

8.

LATE DIST

From: Wickersham, Matt <Matt.Wickersham@alston.com>
Sent: Monday, May 12, 2025 4:23 PM
To: sbcob
Cc: Amjad, Robia
Subject: Public comment re 5/13/25 BOS Agenda Item No. 8
Attachments: Part 1 of 2 - SPR - Santa Barbara BOS - 5-13-25 Item No. 8 Cmt Ltr - Attachments A-C.pdf

Importance: High

Part 1 of 2

Attached please find a comment letter submitted on behalf of Sentinel Peak Resources California LLC. Please confirm that you received the attachment. Thanks

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VIA EMAIL

May 12, 2025

Santa Barbara County Board of Supervisors
105 E Anapamu Street
Santa Barbara, CA 93101
sbcob@countyofsb.org

Re: Comment Letter regarding Agenda Item 8 for the May 13, 2025 Meeting (No. 25-00399) re Options to Address Emissions from Oil & Gas Operations

Dear Members of the Santa Barbara Board of Supervisors,

On May 13, 2025, the Board of Supervisors of the County of Santa Barbara ("County") will hear recommendations regarding options to address emissions from oil and gas operations, outlined in Board Agenda Letter 25-00399 ("Board Letter"). The Board Letter includes several potential actions, such as amending the current County ordinances to prohibit new drilling, maintaining the status quo and allow acceptance of permit application for new drilling, or pursuing other alternatives. The Board Letter recommends the prohibition of new drilling as the most viable and least resource-intensive option, while also advising against incorporating oil and gas emissions into the Climate Action Plan due to resource constraints and potential complications in meeting emissions targets.

On behalf of Sentinel Peak Resources California LLC, we appreciate the opportunity to submit these comments prior to the May 13, 2025, public hearing on this matter and urge the Board of Supervisors to postpone consideration of the Board Letter recommendations. The recommended actions are not appropriate given California's energy demands, the potential constitutional violations, and the attempt to circumvent environmental review mandated by California Environmental Quality Act ("CEQA").

1. *The Board Letter's Recommendations Do Not Protect the Environment*

The Board Letter's recommendations will significantly limit oil production within California. Local oil and gas production remains a critical component of California's energy infrastructure. Despite this, both state and local governments have imposed increasingly stringent permitting and regulatory requirements on oil and gas operations. Faced with recent announcements of refinery closures, the State has finally belatedly acknowledged the importance of maintaining a stable and affordable fuel supply. In an

October 2024 letter to the California Air Resources Board, Governor Gavin Newsom emphasized the need to ensure fuel reliability and affordability, stating that "it's imperative that the state maintain a reliable and affordable supply of transportation fuels" and directed CARB to expedite regulatory processes that could enhance fuel availability. (Attachment A [Office of Governor Gavin Newsom, *Letter to California Air Resources Board*, Oct 25, 2024].) This letter demonstrates the importance of preserving local production and refining capacity in California.

Local oil production plays a vital role in providing valuable jobs and tax revenue to the County. (Attachment B [WSPA, Fueling Economic Growth in Santa Barbara County].) The oil and gas industry provides benefits to Santa Barbara County in the form of over 5,000 jobs and over $2 billion in total economic contribution. (See *id.*; Attachment C [LAEDC 2025 Report re Oil & Gas in California] at p. 105.)

Local oil production also ensures that California has the energy resources necessary to sustain its economy. The oil pipeline network of the State is disconnected from the other lower 48 states and therefore the State is almost exclusively reliant on supertankers for its oil imports. (See Attachment C [LAEDC 2025 Report re Oil & Gas In California] at p. 4, 42.) Excess reliance on imported oil could expose the County's residents and businesses to "risks of significant supply shortages and price spikes from international turmoil, competition from other large energy consumers like China and India, and transportation disruptions." (*Ibid.*) Crude oil pipelines within California are also falling close to the critical minimum throughput levels that are needed to maintain safe flow. (Attachment D [WSPA, Urgent Vulnerabilities and Risks in California's Fuel Supply Chain, Sept. 2024].) If these pipelines must be shut down, some California refineries also lack the marine capacity to compensate with increased imports. (*Ibid.*) Even slight reductions in local production can result in additional refinery closures, leading to significant disruptions in the State's production of transportation fuels and increased gas prices.

Local oil production is subject to some of the most stringent environmental and labor regulations in the world, making it significantly more protective of air quality, public health, and worker rights than many foreign sources. The California Geologic Energy Management Division (CalGEM) acknowledged in an Environmental Impact Report ("EIR") that the importation of foreign crude oil is necessarily associated with an increase in greenhouse gas ("GHG") emissions:

> Sources of GHG at oil and gas fields outside of California are not subject to California's regulatory setting (EIR Section 10.12.2), which ensures that GHG sources in the business of oil and gas production in California are subject to multiple programs aimed at reducing GHG. Emissions of GHG that occur at a point of oil and gas extraction outside of California are not subject to the Cap-and-Trade Program, and ***by increasing the activity of oil and gas extraction outside of California, this alternative would cause increased GHG from sources that are not required to offset the GHG to comply with California's cap, resulting in an overall net increase in GHG***

> ***emissions compared with both existing conditions and the project.*** Although the oil and gas extraction and associated GHG emissions would occur outside California, California would continue to experience the adverse environmental effects of global climate change driven by GHG emissions worldwide. This impact would occur from GHG sources that are not covered by California's regulatory setting and outside of the potential control of DOGGR to feasibly mitigate. As a result of increasing GHG emissions from sources beyond California's control, no feasible mitigation would be available. This alternative would increase GHG emissions from sources that could not be prevented, reduced, offset, or otherwise mitigated by DOGGR or another California agency tasked with reducing GHG emissions. The GHG emissions increase would cause a potentially significant impact on the environment, and because these emissions would occur beyond California's control, Impact GHG-1 would be Class I: Significant and Unavoidable.

(Attachment E [SB 4 EIR] at p. 12.2-37, emphasis added; see also Attachment F [LA County's EIR on the Baldwin Hills Community Standards District] at 4.2-42 to 4.2-45 ["The use of foreign crude oil is associated with substantial emissions associated with transportation [which] causes the greenhouse gas lifecycle emissions associated with foreign crude oil to be substantially higher than California crude oil"].) Imposing arbitrary restrictions on local oil production is not only economically disruptive but also environmentally counterproductive.

A reduction in oil production within the County will necessarily result in an immediate, significant, and foreseeable increase in the importation of foreign oil (which is necessarily more carbon intensive than oil produced in California), driving GHG emissions higher as a result of the ships and other vessels needed to import the oil to California and the County. These emissions, however, can be significantly reduced by the continuation of oil and gas production within the County. Yet the Board Letter fails to analyze the potentially significant GHG impacts from its recommendation.

2. *The Board Letter's Recommendations Would Constitute a Taking of Vested Rights in Violation of the U.S. and California Constitutions*

The Board Letter states that AB 3233 provides the County with the authority to prohibit new drilling. However, AB 3233 does not provide carte blanche to adopt restrictions making it more difficult for existing businesses to continue operating within the County. The U.S. and California Constitutions prevent the government from the taking of private property rights without the payment of just compensation. The County faces considerable exposure by preventing the drilling of any new wells regardless of whether a new well is necessary to access valuable mineral rights. For instance, in the lawsuit challenging a Monterey County ordinance prohibiting new drilling, the trial court found that the ordinance's prohibitions "would cause a facial taking as to those plaintiffs who had no active wells, but no remedy was necessary because those two provisions were

preempted." (*Chevron U.S.A., Inc. v. County of Monterey* (2021) 70 Cal.App.5th 153, 162.) AB 3233 would provide no protection to local governments suddenly liable for the taking of valuable mineral rights.

The U.S. and California Constitutions provide that private property shall not be taken without just compensation. (U.S. Const. amend. V; Cal. Const., Art. 1, § 19.) As the U.S. Supreme Court has held repeatedly, "while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking." (*Lucas v. S.C. Coastal Council* (1992) 505 U.S. 1003, 1014.) "The right to remove oil and gas from the ground is a property right." (*Maples v. Kern Cty. Assessment Appeals Bd.* (2002) 103 Cal.App.4th 172, 186.) Moreover, a land use regulation constitutes a facial taking of property when it "denies an owner economically viable use of his land" (*Lucas*, 505 U.S. at p. 1016, citations omitted), or strips a property owner of "substantial economic use" of their affected property. (*See Maritrans Inc. v. U.S.* (Fed. Cir. 2003) 342 F.3d 1344, 1351-52.) A regulation may also constitute a taking where "it saps too much of the property's value or frustrates the owner's investment-backed expectations," such as would occur with a prohibition on all new wells. (*Sheetz v. Cnty. of El Dorado* (2024) 601 U.S. 267, 267-268, citing *Penn Central Transp. Co. v. New York City* (1978) 438 U.S. 104, 123, 127.) Thus, there are multiple avenues by which the Board Letter's recommended action could result in significant financial liabilities to the County.

The County must also consider the vested rights of these operators to continue their existing operations. Operators and mineral rights owners have made substantial investments in reliance on the reasonable expectation that they would be permitted to continue drilling, maintaining, and operating their wells in accordance with established best management practices. The prohibition of continued drilling or other standard operating practices constitutes an unconstitutional taking of these property rights, requiring the payment of just compensation.

The Board Letter fails to evaluate the legal propriety of establishing a ban on new drilling and ignores a key legal doctrine that could invalidate this proposed amendment – the diminishing asset doctrine. (*See Hansen Bros. Enters. v. Board of Supervisors* (1996) 12 Cal.4th 533.) The California Supreme Court in *Hansen* recognized the "diminishing asset" doctrine and defined the scope of vested rights for mining, quarrying and other extractive uses, recognizing the unique qualities of extractive uses and holding that it includes an expansion of those uses.

As explained in the context of a quarry, the court in *Hansen* stated:

> The very nature and use of an extractive business contemplates the continuance of such use of the entire parcel of land as a whole, without limitation or restriction to the immediate area excavated at the time the ordinance was passed. A mineral extractive operation is susceptible of use and has value only in the place where the resources are found, and once the minerals are extracted it cannot again be used for that purpose. 'Quarry

> property is generally a one-use property. The rock must be quarried at the site where it exists, or not at all. An absolute prohibition, therefore, practically amounts to a taking of the property since it denies the owner the right to engage in the only business for which the land is fitted.'

(*Hansen,* 12 Cal.4th at pp. 553-54 (and cases cited therein).)

Similarly, operators' vested oil and gas rights are uniquely situated in the County, and the proposed amendment seeks to restrict access and development of those resources in the entire County, without the ability to extract them elsewhere. (*See Los Angeles v. Gage* (1954) 127 Cal.App.2d 442.) The proposed amendment will deprive these operators of the right to engage in the only business for which its subsurface mineral rights are fitted. Under the diminishing asset doctrine, operators are entitled to produce oil and gas resources under its vested rights until the resource is exhausted or otherwise uneconomical to produce—the continued production of oil and gas resources is protected under the *Hansen* line of cases as an expanded use.

3. *The Proposed Actions Violate Due Process Under the U.S. and California Constitutions*

The U.S. and California Constitution guarantee equal protection of the laws and adequate due process. These rights also apply in the land use context. (Cal. Const., Art. 1, § 7(a); U.S. Const. amend V, XIV; *College Area Renters & Landlord Ass'n v. City of San Diego* (1996) 43 Cal.App.4th 677, 686.) Substantive due process addresses improper governmental interference with property rights and irrational actions by government decision-makers. (*Lingle v. Chevron U.S.A. Inc.* (2005) 544 U.S. 528, 541; *Arnel Development Co. v. City of Costa Mesa* (1981) 126 Cal.App.3d 330, 337.)

The Board Letter's recommendation to prohibit new oil and gas drilling raises serious due process concerns, as it is arbitrary, capricious, and lacking any rational basis. While courts apply a more deferential standard to local ordinances that do not target a protected class, the government must still articulate a rational connection between the regulation and a legitimate public interest. Here, the County claims the amendment is intended to reduce greenhouse gas emissions, yet it fails to acknowledge that demand for petroleum products will persist regardless of local supply constraints. Because California remains largely disconnected from national pipeline infrastructure, any reduction in local production will necessarily be offset by increased imports of foreign oil—often transported by carbon-intensive marine shipping and produced under weaker environmental and labor standards. This outcome directly undermines the County's stated climate goals and contradicts the premise of the Board Letter. A policy that purports to reduce emissions but predictably increases them lacks the rational basis required under due process principles and cannot withstand even the most deferential level of scrutiny.

The County's actions also remain subject to preemption, even if limited just to a drilling prohibition. Any such restriction will impermissibly intrude upon the regulation of

injection wells throughout the County. The State only regulates injection wells pursuant to a delegation of authority to CalGEM to regulate the UIC program under the federal Safe Drinking Water Act. "Congress intended that states retain authority respecting underground injection so long as it does not impinge on the UIC program administered by the EPA." (*Bath Petroleum Storage, Inc. v. Savas* (N.D.N.Y. 2004) 309 F.Supp.2d 357, 367-368.) "[S]urely the prohibition above prevents such local law from altogether preventing UIC activity." (*EQT Prod. Co. v. Wender* (S.D.W.Va. 2016) 191 F. Supp. 3d 583, 601, affd. on other grounds (4th Cir. 2017) 870 F.3d 322.) Actions by local governments that make it impossible for operators to drill, maintain or continue to use injection wells are preempted by federal law.

Even under state law, the decision by the California Supreme Court in *County of Monterey* specifically held that local governments are preempted from interfering in the regulation of oil and gas operations. (*Chevron U.S.A. Inc. v. Cty. of Monterey* (2023) 15 Cal.5th 135.) The Legislature attempted to negate this holding in adopting AB3233 and adding section 3106.1 to the Public Resources Code, however, the preemption determination made by the Supreme Court in the *Monterey* case was based on the constitutional provisions providing for preemption by state law over conflicting local ordinances. The California Supreme Court is the final arbiter on these state constitutional issues unless a constitutional amendment is adopted.

A drilling prohibition would also be preempted because state law has "fully occupied" the field of regulating the production of oil and gas, including drilling, operations, abandonment, and maintenance. The extensive host of State laws and associated regulations clearly reflect an intent to occupy the entire area of oil and gas production.

Several of the other options evaluated in the proposed amendment—such as regulating cyclic steaming, mandating the abandonment of idle wells, or restricting the operation of existing active wells—extend far beyond the proper scope and expertise of local government. Regardless of the ambiguous language in AB 3233, it is unreasonable and legally risky for the County to attempt to intervene in areas clearly preempted by state and federal law. Doing so not only creates significant legal exposure but also undermines the effectiveness of existing state programs. For example, CalGEM's Idle Well Program has shown to be effective in reducing the number of idle wells and mitigating the risk of orphaned wells.

In fact, the most effective way to prevent orphan wells is to provide operators with a viable path forward for continued, responsible production. If the County is genuinely committed to reducing greenhouse gas and air quality emissions, the most rational and environmentally sound approach would be to support increased local production under strict regulatory oversight, thereby reducing reliance on imported oil that carries a far greater carbon footprint.

4. *Other Local Government Actions Do Not Justify the Recommendations*

The Board Letter references several other jurisdictions that have adopted or considered oil and gas drilling bans as justification for the proposed amendment. However, none of these examples provide a valid or legally sound basis for concluding that a similar ban would be appropriate or defensible in Santa Barbara County.

For example, the Board Letter mentions that Culver City adopted an ordinance prohibiting the drilling of any new wells, the redrilling of any existing wells, requiring the plugging and abandonment of all oil and gas wells, and termination of oil and gas operations within the Culver City by 2026. This ordinance was modified based on a settlement with the sole impacted operator but, in any event, Culver City's regulation of oil operations only affects a small portion of the Inglewood Oil Field—approximately 10% of the field's total area—and involved a limited number of wells. The scale and scope of Culver City's action are not analogous to Santa Barbara County, which involves an exponentially larger network of oil and gas operations.

Similarly, the Board Letter also mentions ordinances adopted by the City of Los Angeles and the Counties of Los Angeles and Ventura. All of these ordinances, however, have faced substantial legal challenges. The Los Angeles City ordinance was invalidated in court, and the City is now in the process of rescinding it. (See Attachment G [LA City Attorney Report].) With regard to the Los Angeles County ordinance, Los Angeles County recently announced that it will be preparing a full EIR before it reconsiders re-adoption of its ordinance. (See Attachment H [Notice of Preparation].) Ventura County too faced litigation following the adoption of a similar ordinance. As part of a settlement, the Ventura County Board of Supervisors adopted a resolution clarifying that its drilling ban would only apply to wells that required new discretionary permits, and that it would not affect the ministerial approvals that are typically used to drill new wells within the County. (Attachment I [Board Clarification].)

In sum, the examples cited in the Board Letter do not support the conclusion that a sweeping drilling ban is a reasonable or legally defensible action for Santa Barbara County. On the contrary, they demonstrate that such bans are highly susceptible to legal challenge and require extensive environmental review. The County should not rely on these flawed precedents to justify a sweeping policy change that carries substantial legal, economic, and environmental risks.

5. *The County Must Comply with CEQA Requirements and Complete an EIR for the Proposed Actions*

The County has a duty to thoroughly evaluate and analyze the significant impacts to mineral resources, air quality, GHG emissions, and other environmental effects under CEQA before any action is taken by the County impeding oil and gas development. And as evidenced by the significant environmental impacts that the ordinance amendment will have on the environment, the fair argument standard would require the County to prepare

an EIR. (*No Oil, Inc. v. City of Los Angeles*, 13 Cal.3d 68 (1974); *Friends of B Street City of Hayward*, 106 Cal.App.3d 988 (1980); Cal. Pub. Res. Code §§ 21080(c)-(d), and 21100(a); CEQA Guidelines § 15064(f)(1).) "Given the statute's text, and its purpose of informing the public about potential environmental consequences, it is quite clear that an EIR is required even if the project's ultimate effect on the environment is far from certain." (*Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 382-83.)

The County must also analyze the potentially significant environmental effects to aesthetics, traffic, odor, and noise that may be caused by the accelerated rate of abandonment activities as a result of the Board Letter recommendations.

The County is also required to analyze reasonably foreseeable indirect impacts under CEQA, which extends to the adoption of ordinances that result in changes to land use patterns. CEQA review is necessary to assess the potential impacts that may result from the development of the sites as they are abandoned. If a direct change in the physical environment will cause another change in the environment, the secondary effect must be evaluated as an indirect effect of the project. (CEQA Guidelines, § 15064(d).) The impact analysis must consider the potential for growth-inducing impacts, including increases in population growth and construction that may result from discontinuing and removing legally established oil wells and production facilities. (CEQA Guidelines § 15126(d), 15126.2(d).)

The Board Letter's proposed amendment to restrict and prohibit drilling triggers the requirement for a full EIR under CEQA.

6. The Proposed Actions Cannot Be Adopted Without a General Plan Amendment

To the extent that the County moves forward with any of the suggested actions in the Board Letter that restrict oil and gas development, the County would be acting in conflict with its General Plan. For instance, any prohibition on new oil and gas drilling directly contradicts existing policies in the General Plan, which explicitly recognizes the economic importance of mineral resource extraction. The Conservation Element states that "mineral resource extraction in the County makes a relatively important contribution to the local, state, and national economies, and, as such, should be encouraged" (Attachment J [Conservation Element], p. 169).

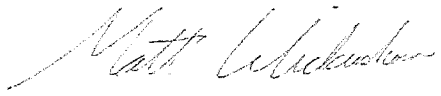
Substantial changes would be required to the County's General Plan in order to avoid internal inconsistencies that violate statutory requirements and render the plan ineffective. (*Garat v. City of Riverside* (1991) 2 Cal.App.4th 259.) "Internal consistency requires that diagrams in the land use, circulation, open space, and natural resource elements reflect the written policies and programs of those elements." (*Orange Citizens for Parks & Recreation v. Superior Court* (2016) 2 Cal.5th 141, 153.)

This inconsistency also impedes the function of the General Plan. A "general plan functions as a 'constitution for all future developments,' and land use decisions must be consistent with the general plan and its elements." (*Endangered Habitats League, Inc. v. County of Orange* (2005) 131 Cal.App.4th 777, 782, citation omitted.)

* * *

For all of these reasons, we urge the Board of Supervisors to postpone consideration of the proposed recommendations in the Board Letter unless and until it cures the numerous legal defects discussed herein.

Sincerely,



Matt Wickersham

ATTACHMENT A

OFFICE OF THE GOVERNOR

October 25, 2024

Liane Randolph
Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95814

Dear Chair Randolph,

Thank you for your leadership and dedication to addressing California's climate crisis, our persistent air quality challenges, and our affordability concerns. California is on the frontlines of the climate crisis – and too many Californians continue to breathe dirty air. Together we have taken bold steps to advance clean transportation options, including a world-leading clean fuels and zero-emission vehicle agenda, on our path to achieve economy-wide carbon neutrality by 2045 and to meet federal air quality mandates.

At the same time, California families have also experienced significant gasoline price spikes – particularly during Fall 2022 and Fall 2023 – costing Californians upwards of $2.2 billion. As we continue to shift away from fossil fuels, it's imperative that the state maintain a reliable and affordable supply of transportation fuels.

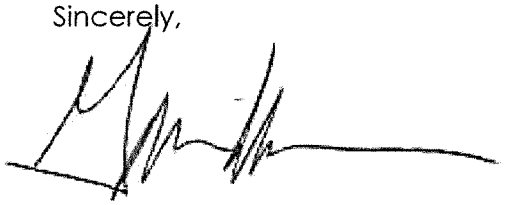
In furtherance of our work to address gasoline price spikes, the Energy Commission partnered with California regulatory agencies, including California Air Resources Board (CARB), and stakeholders to publish the Transportation Fuels Assessment. One production enhancement strategy that the Energy Commission considered is to "allow increased blending of ethanol with CARBOB from 10 percent (E10) to 15 percent (E15), effectively augmenting the existing CARBOB supply." According to a University of California, Berkeley and United States Naval Academy study, allowing E15 fuel could result in a $0.20 per gallon price decrease, saving Californians up to $2.7 billion per year. Additionally, an initial analysis commissioned by the state suggests that allowing this fuel blend would result in no additional environmental harm.

Under Senate Bill 529 (Bowen, 1999), any regulatory change to change California's gasoline blend requires a Multimedia Evaluation and approval by the Environmental Policy Council – an intensive process unique to California, which the federal government and the many other states that have already allowed use of E15 fuel have not been required to undertake.

Given the potential for allowing E15 gasoline to increase fuel supply and reduce gasoline prices, with little to no environmental harm, it is prudent for CARB to prioritize resources that would allow for the expeditious completion of this process. Therefore, I am directing CARB to accelerate its action on this critical issue. Further, I welcome partnership with the Legislature next year to consider necessary statutory changes and funding that would further expedite CARB's consideration of authorizing E15.

I look forward to working with you and the Legislature to continue to tackle these challenges in the years to come.

Sincerely,



Gavin Newsom
Governor of California

ATTACHMENT B

Western States Petroleum Association™

Regional Factsheet: **Central Coast**

Fueling Economic Growth on the Central Coast

As the third largest oil and natural gas producing region in the state, the Central Coast makes a significant impact on California's oil and gas industry.

Dawn Cooper
Aera Energy
Production Operation

"I started as an Administrative Assistant working in the office. Today I am a Production Operator and work in the field. The variety of jobs in the industry with unlimited potential and the great pay and benefits are why I wanted to work in this industry. As a single mother I have purchased my own home and provide a wonderful life for my son."

6,410
Central Coast residents directly employed by the oil and gas industry

1%
Share of Jobs in the region

$609M
State & Local Tax Revenue

11,490
Total number of jobs in the Central Coast Region supported by the oil and gas industry

That's enough people to fill the Santa Barbara Bowl ampitheater nearly 3 times*

*Source: sbbowl.com

$2.9B
Total Economic Contribution

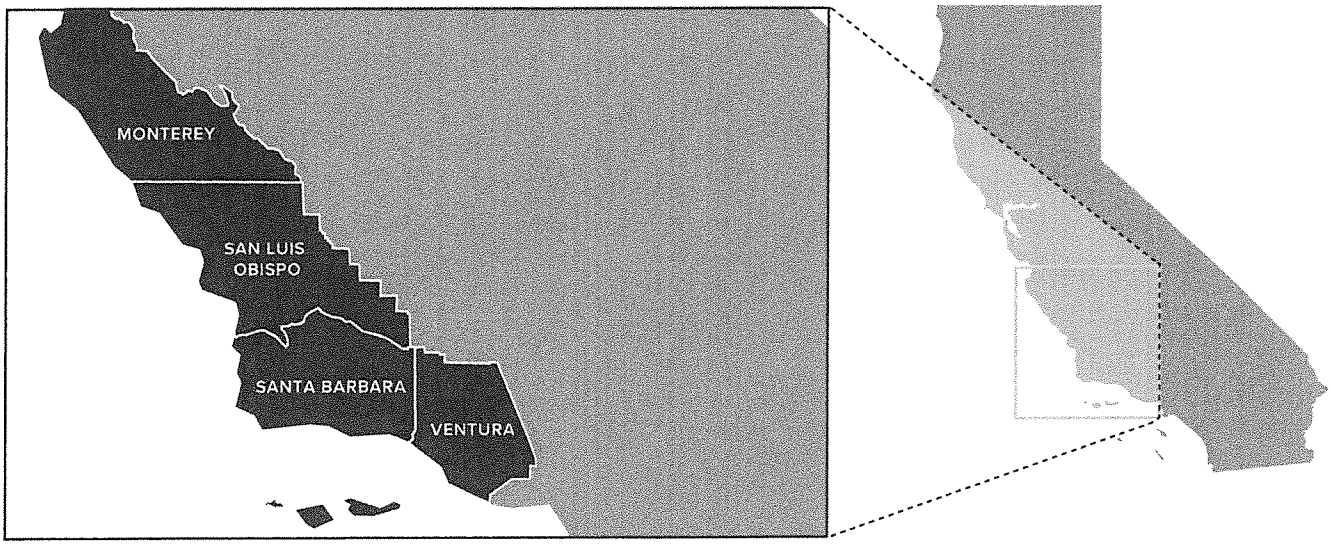
This is the economic output, or total value of production, of the oil and gas industry in the Central Coast region.

$673M
Total wages and benefits that are reinvested into the local economy for homes, transportation, food, etc.

Regional Factsheet: Central Coast

Breakdown by County

Western States Petroleum Association™



Monterey

Total Jobs
1,360

Labor Income
$62 Million

Economic Contribution
$225.9 Million

State & Local Tax Revenue
$132.2 Million

Share of Total Jobs in County
0.5%

San Luis Obispo

Total Jobs
2,240

Labor Income
$113.5 Million

Economic Contribution
$750.4 Million

State & Local Tax Revenue
$124.5 Million

Share of Total Jobs in County
1.3%

Santa Barbara

Total Jobs
2,670

Labor Income
$174.4 Million

Economic Contribution
$799.3 Million

State & Local Tax Revenue
$150.6 Million

Share of Total Jobs in County
1.0%

Ventura

Total Jobs
4,010

Labor Income
$262.2 Million

Economic Contribution
$982.4 Million

State & Local Tax Revenue
$201.9 Million

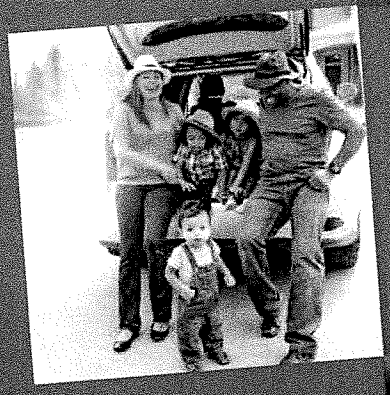
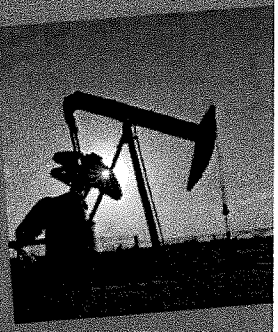
Share of Total Jobs in County
0.9%

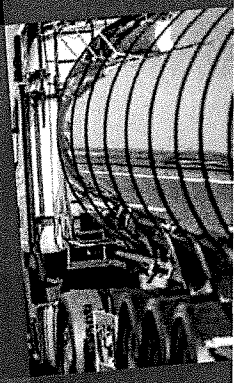
A report titled "2019 Report Oil & Gas in California: The Industry, Its Economic Contribution and User Industries at Risk" examined the economic contribution of the oil and gas industry in California for the year 2017, the most recent annual data available, as well as identified user industries of refined products most vulnerable to cost increases, supply restrictions and competitive pressures from outside the state. The study was conducted by the Los Angeles County Economic Development Corporation on behalf of the Western States Petroleum Association.

To read the full report, visit wspa.org/LAEDC

ATTACHMENT C




LAEDC

2025 REPORT

Oil & Gas In California

The Industry, It's Economic Contribution and Major User Industries

A look at the industry in 2022, the most recent year with complete data available.

OIL AND GAS IN CALIFORNIA:

THE INDUSTRY, ITS ECONOMIC CONTRIBUTION AND MAJOR USER INDUSTRIES

Los Angeles County Economic Development Corporation
633 W. 5th Street, Suite 3300 ◆ Los Angeles, CA 90071
(888) 4-LAEDC-1 ◆ www.LAEDC.org

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Research assistance provided by our intern Lizzy Chen

March 2025

This research was commissioned by the Western States Petroleum Association.

The LAEDC Institute for Applied Economics provides objective economic and policy research for public agencies and private firms. The group focuses on economic impact studies, regional industry analyses, economic forecasts and issue studies, particularly in workforce development, transportation, infrastructure and environmental policy.

Executive Summary

The California oil and gas industry remains a vital economic engine, supporting hundreds of thousands of jobs and contributing billions of dollars in tax revenues through its extensive upstream, midstream, downstream, and market activities. Despite facing significant challenges, including regulatory pressures, market fluctuations, and global geopolitical tensions, the industry has continued to provide critical economic, employment, and fiscal benefits across the state. Activities within the various segments of the industry drive investment, create jobs, and generate significant tax revenues that fund essential public services.

This report highlights key economic contributions, workforce dynamics, and policy considerations the oil and gas industry faces in California as the state seeks to balance their environmental goals with economic resiliency.

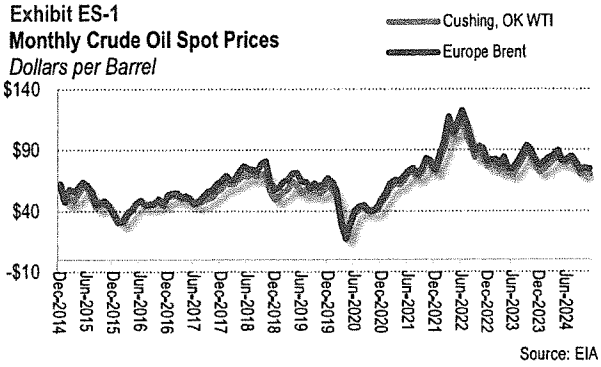
The oil and gas industry is typically divided into four primary segments: upstream, midstream, downstream, and market.

- **Upstream** operations focus on the extraction of oil and gas and its initial separation.
- **Midstream** operations include the processing and separation of natural gas and condensates, and the transportation (including pipelines), storage, and wholesale of crude oil, natural gas, natural gas liquids (NGLs), and other hydrocarbon products.
- **Downstream** operations involve refining crude oil and processing natural gas to prepare these resources for distribution and sale to end users.
- The **market** segment separates out the distribution and retail of oil and gas products to end users.

Industry Overview, Trends, and Current Issues

The California oil and gas industry faces an evolving landscape shaped by market volatility, geopolitical conflicts, and regulatory reforms (**Exhibit ES-1**). Due to limits placed on in-state production and since California has no interstate oil pipelines, California refineries import about 75 percent of the state's crude oil needs from Alaska and foreign sources, mostly through the San Pedro Bay port complex.

The industry has faced market volatility driven by international events such as the COVID-19 pandemic and geopolitical tensions like the Russian invasion of Ukraine.



Current legislation, while well intended, will have economic implications for the state economy, impacting the oil and gas industry workers, user industries, and end users/consumers. These include, but are not limited to:

- **Senate Bill (SB) 1137**: Establishing health protection zones around oil wells to reduce environmental and health risks.
- **Assembly Bill (AB) X2-1**: Regulating petroleum product inventories to stabilize gasoline prices.
- **Senate Bill (SB) 1322**: Requires all refiners of gasoline products to provide monthly data about various price and volume information, such as the gross gasoline refining margin and the volume and price of domestic and imported crude oil.
- **Senate Bill (SB) X1-2**: Expands the monthly refinery reports to require net gasoline refining information and authorized the California Energy Commission (CEC) to set a maximum gross gasoline refining margin with penalties for exceeding it.

Technological advancements such as artificial intelligence (AI) and digital twin systems have improved operational efficiency while reducing environmental impacts.

Looking ahead, embracing technology and regulatory modernization is essential to sustain the industry and meet California's energy needs.

Economic and Fiscal Contribution

In addition to the jobs it provides, the oil and gas industry is a tax revenue source that underpins public infrastructure, education, and healthcare.

Across the state, the industry supports 536,770 jobs, generating $53 billion in labor income, and $166 billion in value-added economic activity. It contributes $47.9 billion in state and local taxes and $16.3 billion in federal taxes (**Exhibit ES-2**).

Exhibit ES-2
Total Economic and Fiscal Contribution of Oil and Gas Industry California 2022*

Employment (jobs):		**536,770**
Direct	*148,150*	
Indirect and induced	388,620	
Percent of California Total Employment		2.1%
Labor income ($ millions):		**$ 53,366**
Direct	*23,045*	
Indirect and induced	*30,321*	
Percent of California Total Labor Income		2.5%
Value added ($ millions):		**$ 166,048**
Direct	*117,520*	
Indirect and induced	*48,527*	
Percent of California Total GDP		4.6%
Output ($ millions):		**$ 337,995**
Direct	*257,750*	
Indirect and induced	*80,245*	
Percent of California Total Output		5.7%
Fiscal Impact ($ millions):		**$ 64,256**
State and local	*$47,940*	
Federal	*$16,316*	

Note: Includes royalty earners
Source: Estimates by LAEDC

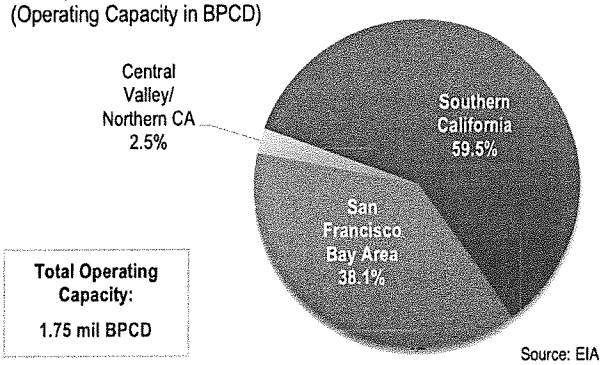
Economic Contribution by Sub-Region and County

This report divides the state of California into four key sub-regions: Southern California, the San Francisco Bay Area, Central Coast, and San Joaquin Valley. The contribution of the oil and gas industry across the state's 58 counties are also presented. Regional economic disparities exist across regions and counties.

Key findings of this section include:

- The workforce is diverse across the regions, across age groups, by race and ethnicity, and worker educational attainment.
- Just under half of all direct industry employment (48 percent) is in Southern California
- The Southern California region accounts for 28 percent of the oil and gas industry's total contribution to the California economy (Gross State Product)
- Refineries are located largely within two sub-regions: Southern California and the San Francisco Bay Area (**Exhibit ES-3**).
- Kern County accounts for nearly 80% of oil well activity.
- The three largest refineries in the state are located in Los Angeles County in the cities of El Segundo, Richmond and Carson.

Exhibit ES-3
Refining Capacity in CA by Sub-Region 2022
Atmospheric Crude Distillation Capacity
(Operating Capacity in BPCD)



Source: EIA

Industry Workforce

The oil and gas industry employed over 144,500 payroll employees in California in 2022,[1] and industry payroll employment is expected to grow moderately by close to 3 percent, reaching more than 148,500 jobs by 2027. This growth equates to a net gain of approximately 4,000 payroll jobs over five years, with mixed performance across the various segments of the industry (**Exhibit ES-4**).

Employment projections reflect stable commodity prices and assume continued recovery from prior downturns. Growth is expected to be led by the market and midstream segments, while upstream and downstream segments will likely face employment declines.

Exhibit ES-4
5-Year Oil and Gas Industry Workforce Needs
California 2022 to 2027

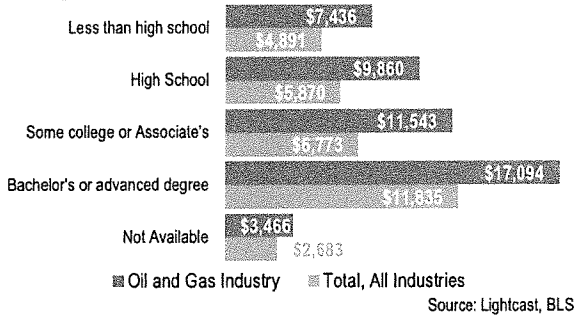
	2022 Payroll Jobs	2027f Payroll Jobs	2022-27f Change (%)
Upstream Segment	11,897	11,030	-7.3
Midstream Segment	20,805	21,850	5.0
Downstream Segment	9,643	8,650	-10.3
Market Segment	102,185	107,000	4.7
Total Oil and Gas Industry	144,531	148,530	2.8

Source: Lightcast; Estimates by LAEDC

The oil and gas industry continues to offer stable employment with competitive wages and benefits for those with lower levels of formal education. For example, gas plant operators earn a median annual wage of $105,000; petroleum pump system operators, refinery operators, and gaugers earn $95,610; and oil and gas service unit operators earn $64,430.

Oil and gas jobs offer premium wages at all educational levels (**Exhibit ES-5**), significantly higher than the average monthly earnings for all industries, reflecting the sector's strong worker earning potential.

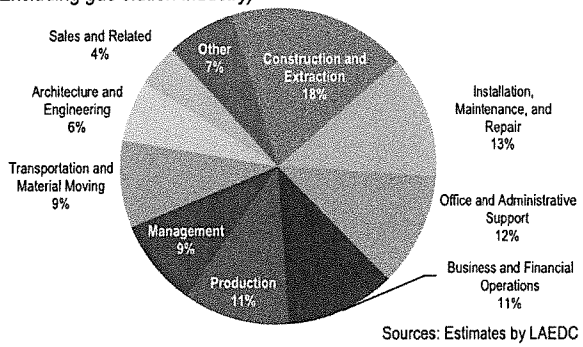
Exhibit ES-5
Average Monthly Earnings 2022



Source: Lightcast, BLS

The industry employs workers in occupations across the skills spectrum. Sales and related occupations account for 37 percent of employment, reflecting the large share of workers employed in retail gas stations. However, By excluding gas station workers, the focus shifts to the core activities of the oil and gas industry, such as exploration, extraction, production, and distribution (**Exhibit ES-6**). These roles require higher levels of skill and education and offer higher wages compared to retail jobs.

Exhibit ES-6
Occupational Distribution of Oil and Gas Industry
(Excluding gas station industry)



Sources: Estimates by LAEDC

This redistribution underscores the industry's reliance on specialized occupations to maintain operations and meet energy demands. Examples of these oil and gas specific occupations detailed in this report include:

- Petroleum Engineers (SOC 17-2171)
- Geological Technicians, Except Hydrologic Technicians (SOC 19-4043)
- Pipelayers (SOC 47-2151)

[1] Accounting for self-employed workers, proprietors, and contract workers, total employment in the oil and gas industry in 2022 was about 148,150 jobs.

- Derrick, Rotary Drill, and Service Unit Operators, Oil, Gas, and Mining
  - Derrick Operators, Oil and Gas (SOC 47-5011)
  - Rotary Drill Operators, Oil and Gas (SOC 47-5012)
  - Service Unit Operators, Oil, Gas, and Mining (SOC 47-5013)
- Other Extraction Workers
  - Roustabouts, Oil and Gas (SOC 47-5071)
  - Helpers – Extraction Workers (SOC 47-5081)
- Miscellaneous Plant System Operators
  - Gas Plant Operators (SOC 51-8092)
  - Petroleum Pump System Operators, Refinery Operators and Gaugers (SOC 51-8093)

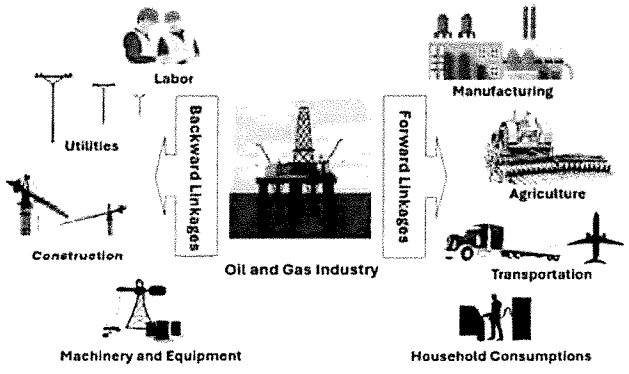
Investing in education and specialized training is essential to maintain a robust talent pipeline. Workforce development programs and apprenticeship pathways are ways to meet future industry workforce needs.

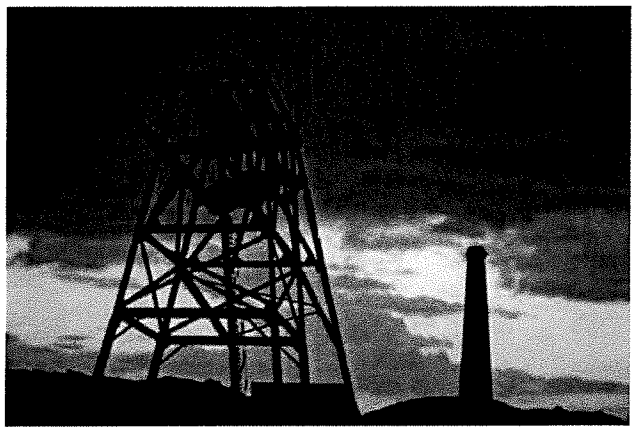
Forward Linkages of Petroleum Products

Petroleum products support a wide range of industries, including transportation, agriculture, and manufacturing. Supply chain disruptions could significantly impact these sectors.

The significance of forward linkages spans well beyond the immediate industries that directly utilize oil and gas products, extending to a vast network of downstream markets through the supply chains (**Exhibit ES-7**). For example, the manufacturing sector transforms

Exhibit ES-7
Illustration of Backward and Forward Linkages of Oil and Gas Industry





petroleum-based chemicals into key products such as plastics, synthetic fibers, and industrial lubricants. The forward-linkages of the successive rounds of direct and indirect industries in the user chain of oil and gas industries are illustrated in the diagram.

Across all five subregions, industries such as petroleum refineries and natural gas distribution consistently appear as top affected user industries in upstream and midstream product disruptions. Construction, truck transportation, professional, scientific, and technical services, and real estate are also consistently identified as top affected industries by disruptions in the oil and gas industry.

In general, subregions with higher multipliers, like Southern California and the San Francisco Bay Area, tend to have larger, more interconnected economies supported by a diverse range of service and infrastructure industries. These industries extend the economic impacts of oil and gas disruptions into various sectors. In contrast, regions like the San Joaquin Valley and Central Coast experience more localized and specialized effects, such as in agriculture, food manufacturing, and transportation. These regions rely more heavily on specific oil-dependent industries, and disruptions tend to have more concentrated effects in these key sectors

Backward and Forward Linkages by County

The oil and gas industry's contributions extend beyond direct production sites, creating jobs and economic opportunities throughout California's counties. We provide data for backward (economic contribution) and forward (user industries) for all 58 counties in California.

Table of Contents

1 Introduction

The oil and gas industry plays a major role in California's economy, contributing significantly to the state's GDP and providing numerous employment opportunities. It supports a wide range of sectors, including manufacturing, transportation, and services. The industry employs thousands of workers and contributes to the states' economy through activities including investment in new infrastructure, purchases of supplies and equipment, local hiring, and sales of refined products. These activities circulate through the economy and generate additional economic activity, supporting hundreds of thousands of workers statewide and contributing billions of dollars in annual tax revenues to state and local governments, funding essential public services such as education, healthcare, and infrastructure development.

Additionally, California's oil and gas production helps ensure energy independence and meets the state's substantial energy needs. The industry also drives technological innovation, fostering advancements in areas such as drilling techniques, environmental monitoring, and sustainable practices. However, the global shift towards renewable energy sources presents challenges that necessitate balancing economic benefits with sustainability efforts.

Report Organization

In this report, the Institute for Applied Economics of the Los Angeles County Economic Development Corporation (LAEDC) estimates the economic and fiscal contribution of the oil and gas industry in California, explores the characteristics, skills, educational pathways, and workforce needs for the industry at the state, sub-regional and county level. Additionally, a supply-driven (user industry) impact analysis is conducted to evaluate how changes in the supply of petroleum products affect the broader economy through forward linkages at the state and sub-regional level. The report is presented in eight parts.

This introductory section provides a short description of the industry definition used in the contribution analysis. Additional details and methodology can be found in the appendix.

Section 2 provides a brief overview of the oil and gas industry in California, including the unique characteristics of upstream, midstream, downstream market segment activity. It also discusses key issues the industry faces that can impact industry operations and its employment

Section 3 provides an estimation of the total economic contribution of the oil and gas industry, including extraction, drilling, pipelines, refining and gasoline wholesale and retail activities. The economic contribution of each industry segment (upstream, midstream, downstream, and market) is also estimated separately. This section also includes a discussion of the public revenues attributed to the industry and the consumption of its products.

Section 4 provides analysis at the sub-regional and county levels and provides contributions for each of the 58 counties within the state.

Section 5 examines the demographic characteristics, including the racial, ethnic and educational attainment, of the oil and gas workforce and recent hires at the sub-regional level. A workforce needs assessment is also provided.

Section 6 traces oil and gas industry products through the industry user chain for each segment of the industry. The top primary user industries most vulnerable to potential supply disruptions are identified for each oil and gas industry segment. Jobs at risk for the top primary user industries are also identified at the county level and the senate and congressional district level. In addition, a supply-driven (forward-linkage) I-O analysis is conducted to assess the impact of production activities in the oil and gas industries on their downstream customer sectors (user industries) at both the state level and for the five subregions.

Section 7 includes detailed sheets for each county in California for the economic contribution of the oil and gas industry, and the number of jobs in industries identified as most at risk from potential refinery supply disruptions. For context, the economic base for each county is provided to illustrate how the oil and gas industry relates to the county economy.

Methodology, detailed industry descriptions, and detailed tables as referenced in the text can be found in the Appendix.

Oil and Gas Industry Definition

The North American Industry Classification System (NAICS) was created to track economic activity for businesses at the establishment level. Each establishment is grouped according to its primary activity. The thirteen NAICS codes included in the definition of the oil and gas industry used in this report are listed in **Exhibit 1-1.** These are described in detail in the Appendix.

Throughout this report, the thirteen industry codes included in the oil and gas industry definition have been grouped into the following categories: upstream, midstream, downstream, and market.

The oil and gas industry is typically divided into four primary segments: upstream, midstream, downstream, and market.

- **Upstream operations** focus on the extraction of oil and gas, including the separation of oil, natural gas, and water at the production stage.
- **Downstream operations** involve refining crude oil and processing natural gas to prepare these resources for distribution and sale to end users.
- **Midstream operations** serve as the bridge between upstream and downstream activities. These include the processing and separation of natural gas and condensates, utilizing heaters and scrubbers to produce pipeline-quality gas, as well as the transportation (including pipelines), storage, and wholesale of crude oil, natural gas, natural gas liquids (NGLs), and other hydrocarbon products.
- Although the retail and distribution of oil and gas products are often considered part of the downstream segment, this report separates industries involved in marketing oil and gas products to end users into a distinct "**market**" category for clarity.

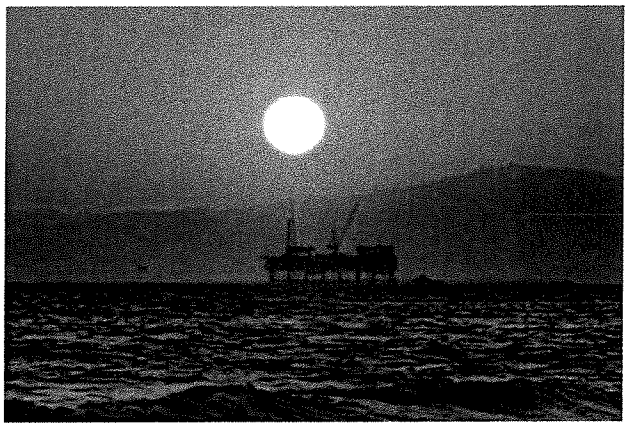
Exhibit 1-1
Oil and Gas Industry Definition

NAICS Code	Industry
Upstream Industries	
(Extraction and Initial Processing)	
211	Oil and gas extraction
213111	Drilling oil and gas wells
213112	Support activities for oil and gas operations
333132	Oil and gas field machinery and equipment manufacturing
Midstream Industries	
(Transportation and Wholesale)	
23712	Oil and gas pipeline and related structures construction
4247	Petroleum and petroleum products merchant wholesalers
486	Pipeline transportation
Downstream Industries	
(Refining and Petroleum and Petrochemical Products Manufacturing)	
32411	Petroleum refineries
324191	Petroleum lubricating oil and grease manufacturing
32511	Petrochemical manufacturing
Market Industries	
(Distribution and Retail)	
2212	Natural gas distribution
4571	Gasoline stations
45721	Fuel dealers

Source: LAEDC

2 Industry Overview, Trends and Current Issues

California's oil and gas industry is an important producer of energy, one that helps to satisfy the energy needs of residents and businesses in the state and across the nation. The state's oil and gas industry remains significant despite a number of headwinds, including geopolitical unrest involving oil producers; high interest rates affecting economic growth and demand for oil; and decarbonization-related regulatory issues. New technologies have helped the industry modernize, though, and mitigate some of these headwinds.



The Oil and Gas Industry Today

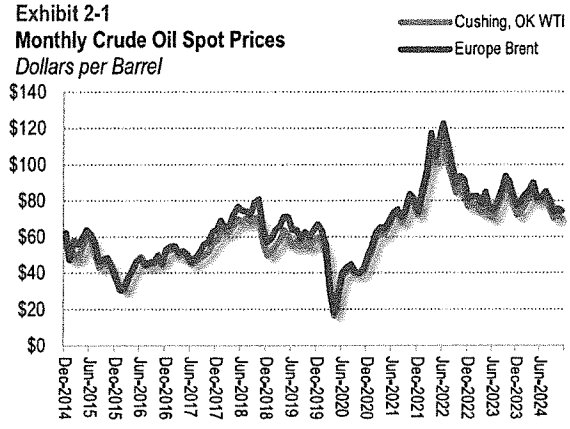
This report examines the current state of activity in the oil and gas industry. Due to data limitations, much of the underlying data captures activity that occurred as of 2022. Where possible, this report provides more recent figures and also compares this activity to historical data.

Supply and Demand

The last ten years of oil price data show a tumultuous decade for the oil and gas industry. From 2015 to 2019, the Brent crude and the West Texas Intermediate (WTI) average monthly spot prices (**Exhibit 2-1**) generally vacillated between $30 and $80 a barrel, reflecting the overall recovery and growth of the global economy in the aftermath of the Great Recession in the late 2000s. In early 2020, however, oil prices dropped precipitously as a result of the COVID-19 pandemic that shutdown economic activity worldwide. At their low points in April 2020, the Brent Crude and WTI spot prices hit $18 and $17, respectively. Prices recovered steadily through 2021 as economies across the globe reopened and business and travel increased, even in the face of ongoing outbreaks of the COVID-19 virus.

Then in 2022, the oil and gas industry experienced another shock with the Russian invasion of Ukraine. Crude oil prices skyrocketed to near-record highs by June 2022—Brent crude touched $123 while WTI reached $115—given that Russia is one of the top three oil producers and a large natural gas exporter, and because Europe and the United States moved to ban imports of Russian crude and refined products. Russian hostilities have continued to this day, but prices have come down particularly since Europe has taken steps to transition its oil and natural gas imports away from Russia and as the

Exhibit 2-1
Monthly Crude Oil Spot Prices
Dollars per Barrel



Source: EIA

United States has increased production. By the end of 2024, oil prices have fallen back below $80, effectively returning to the trend seen ten years earlier.

What is notable about the oil and gas industry particularly in the last few years is its relative stability in spite of global tensions. Beyond the ongoing Russian invasion of Ukraine, October 2023 saw the start of Middle East hostilities after Hamas attacked Israel from the Gaza Strip (and later Hezbollah from Lebanon) and Israel retaliated through extended military activity. This conflagration spread to include Iran as well as Houthi rebels based in Yemen, who harassed not only Israel with missiles but also global shipping through the Red Sea. Even so, the U.S. Energy Information Administration (EIA) forecast that average annual crude oil prices in 2024 and 2025 would remain near their 2023 average

because of relatively balanced global supply and demand for petroleum liquids.[2]

This balance stems partly from the OPEC+ countries—the members of the Organization of the Petroleum Exporting Countries and ten other countries that have coordinated their crude oil production with OPEC since late 2016—reducing their production in step with slowing global economic growth and oil demand in a high interest-rate environment. Relative to 2022 production levels, OPEC+ members are currently cutting output by a total of 5.86 million barrels per day (bpd), representing about 5.7 percent of global demand. This includes 3.66 million bpd of cuts that will take place until the end of 2025 and voluntary cuts by eight members of 2.2 million bpd, that will be phased out beginning in October 2024.[3]

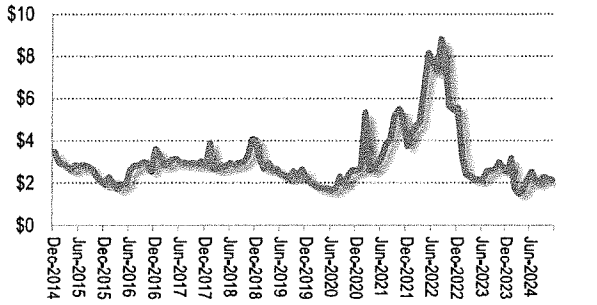
Blunting some of these OPEC+ production cuts is increased production primarily by the United States. The EIA forecast that global supply of petroleum and other liquids would increase by about 0.4 million bpd in 2024 and 2.0 million bpd in 2025 because of the United States, but also thanks to Guyana, Canada, and Brazil. This increase in production is expected to help keep oil prices relatively flat.[4]

California has benefitted to a lesser extent from this price stability relative to the United States as a whole. Having no interstate pipelines for crude oil or refined products, California is effectively an energy island and relies almost exclusively on supertankers for its oil imports. As a result, California competes with Asian and European economies for oil exports from the Middle East, Latin America, and Alaska, and in turn is exposed to Brent international waterborne crude oil prices instead of WTI spot prices like most of the lower 48 states. Brent spot prices have historically been higher than WTI spot prices, and as of November 2024 this difference was $4 per barrel on average.

The United States is also increasing production of liquefied natural gas (LNG) and natural gas liquids (NGLs). The United States first began exporting LNG in 2016, and after several years of growing LNG capacity, the United States became the world's largest LNG exporter during the first half of 2022. At that time, U.S. LNG exports averaged nearly 11.2 billion cubic feet per day, or about 12 percent of the dry natural gas produced in the country. The EIA projects that by the early 2030s, total U.S. natural gas exports will become larger than any domestic end-use sector, including residential, commercial, industrial, and electric generation.[5]

The increased production of natural gas by the United States as well as increased inventories has also helped to keep the price of natural gas in check domestically. The Henry Hub average monthly spot price (**Exhibit 2-2**) mostly remained below $4 from the end of 2014 through 2021, and falling below $2 following the onset of the COVID-19 pandemic. Prices spiked in 2022 as a result of the Russian invasion of Ukraine coupled with greater demand from Europe for U.S. LNG. Additionally, the shutdown of Freeport LNG's natural gas liquefaction plant in South Texas in June 2022 because of a fire reduced total U.S. LNG export capacity by about 17 percent, putting upward pressure on prices. Even so, natural gas spot prices came down significantly in 2023 and are now around $2.

Exhibit 2-2
Monthly Henry Hub Natural Gas Spot Price
Dollars per Million BTU



Source: EIA

Regulatory Environment

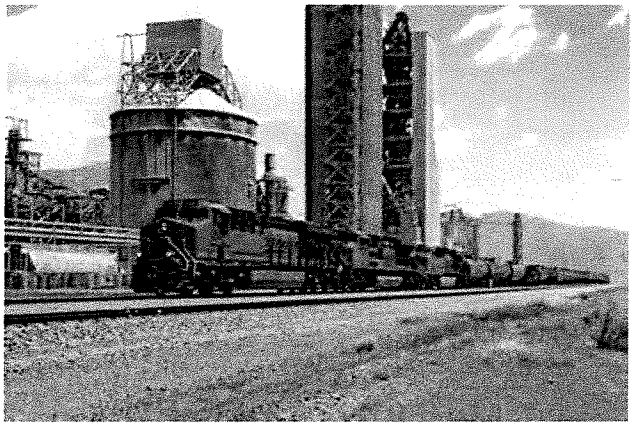
Beyond economic dislocations from the COVID-19 pandemic and the conflicts in Ukraine and the Middle East, the oil and gas industry has been subject to climate-related legislative and regulatory pressures in the United States and Europe. In the United States, for example, passage of the Bipartisan Infrastructure Bill in 2021 created large incentives to decarbonize the energy and transportation sectors, including $73 billion for electric grid and power infrastructure upgrades and $7.5 billion

[2] French, M. (2024, January 10). EIA expects relatively flat crude oil prices in 2024 and 2025. *In-Brief Analysis.* U.S. Energy Information Administration.

3 Ghaddar A., A. Lawler & M. El Dahan. (2024, June 2). OPEC+ extends deep oil production cuts into 2025. *Reuters.*

[4] Hill, S. (2024, March 14). Four countries could account for most near-term petroleum liquids supply growth. *In-Depth Analysis.* U.S. Energy Information Administration.

[5] U.S. Energy Information Administration. (2023, May). *AEO2023 Issues in Focus: Effects of Liquefied Natural Gas Exports on the U.S. Natural Gas Market.*



for electric vehicle charging stations.[6] The Inflation Reduction Act also contains $370 billion in spending and tax credits for low-emission forms of energy to help the United States cut greenhouse gas emissions by an estimated 40 percent below 2005 levels by 2030.[7]

Much of the increasing regulatory pressures comes from a recent series of actions taken by the State of California. These initiatives will make it more difficult to produce oil in the state as well as increase the cost to refine it. Some of the major legislation of particular relevance are Senate Bill (SB) 1137 and Assembly Bill (AB) X2-1:

In September 2022, Governor Gavin Newsom signed SB 1137 into law, which will significantly impact oil production in the state. SB 1137—which was suspended temporarily pending a potential referendum but is now in effect—prohibits the issuance of well permits and the construction and operation of new production facilities within a health protection zone (HPZ) of 3,200 feet from a sensitive receptor such as a school or business. Additionally, all operators must submit an inventory and map of sensitive receptors, and a determination as to whether their existing wellheads and production facilities are located in a HPZ, and all wells and facilities within a HPZ must comply with specific health, safety, and environmental requirements.

In October 2024, Gov. Newsom signed AB X2-1 into law, empowering regulators to set and adjust minimum petroleum product inventory levels for refiners in California. The intent is to prevent gasoline price spikes in the state, which Gov. Newsom attributes to supply shortages deliberately created by refiners to maximize profits. This comes at a time when weak refinery margins have persisted on the West Coast and in the United States overall since the middle of this year.

These are just a few of the more significant regulatory efforts that will impact the oil and gas industry in the near future, both on the supply and demand side. Other efforts include SB 1314, signed in September 2022, which prohibits the use of captured carbon for enhanced oil recovery. The Advanced Clean Cars II regulations, which are intended to rapidly reduce light-duty passenger car, pickup truck and SUV emissions, mandate an increasing number of zero-emission vehicles on California roads. The Air Resources Board is currently developing a proposal to make the Advanced Clean Cars II regulations even more strict. Similarly, the Advanced Clean Trucks regulation is a sales requirement for manufacturers with respect to zero emission trucks. ZEV and a one-time reporting requirement for large entities and fleets.

New Technologies

Recent years have also seen the application of new technologies in the oil and gas industry. Most notable has been the use of artificial intelligence (AI).

Numerous use cases have been cited for AI in the oil and gas sector, beyond the traditional applications like procurement, inventory, back-office management, and cybersecurity applications that can be found across multiple industries. These include using AI tools to analyze geographical features and seismic data to uncover new sources of petroleum; using AI-powered robots to scour drilling sites; and using predictive analytics to reduce downtime at gas and oil wells, platforms, pipelines, refineries and other facilities.[8] AI can also enable the use of "digital twins," which are virtual representations of pieces of equipment or production processes while in operation, and can be composed of one or more underlying technologies such as machine learning models and dynamic process response models. Digital twins enable, among other things, the real-time simulation of equipment or processes, allowing for optimization of use and maintenance.[9]

Altogether, then, AI technologies have widespread applications in the upstream, midstream and

[6] Sprunt, B. (2021, November 15). Here's what's included in the bipartisan infrastructure law *National Public Radio.*
7 Tankersley, J. (2022, August 16). Biden Signs Expansive Health, Climate and Tax Law. *New York Times.*
8 Sharma, G. (2023, August 15). How Multibillion Dollar Investments In AI Are Driving Oil And Gas Sector Innovation. *Forbes.*
9 Lasrado, V. (2020, May). *Essential Digital Twins in Upstream Oil & Gas Production Operations.* Honeywell.

downstream activities of the oil and gas industry. AI can reduce the time to find new deposits, generate efficiencies in equipment and processes that reduce downtime and optimize maintenance, create safety enhancements, reduce carbon footprints, and result in cost savings.

According to the Stanford Institute for Human-Centered Artificial Intelligence, the global energy, oil and gas sector attracted $9.8 billion in private investment in AI between 2020 and 2023. More than half of this private investment occurred in the United States.[10] These types of investments can be expected to increase as AI adoption expands across the broader economy.

Upstream Activity

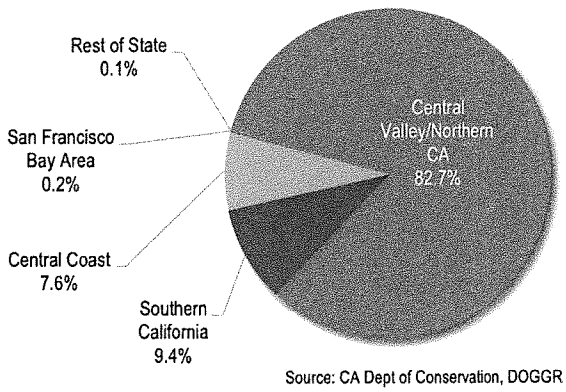
Upstream industries are those that are involved in the exploration and extraction of oil and gas. These industries include production, which involves the drilling of wells and pumping of crude oil and natural gas, and oilfield services. Oilfield services include the manufacturing of oil and gas field machinery used in production and support activities for oil and gas operations, such as exploration (except geophysical surveying and mapping); excavating well cellars, well surveying; running, cutting, and pulling casings, tubes, and rods; cementing wells, shooting wells; perforating well casings; well maintenance activities; and cleaning out, bailing, and swabbing wells. The upstream industry is capital-intensive and highly regulated.

California's Active Oil and Gas Wells

There were 58,463 active oil and gas wells in California in 2024. This represents a nearly 14 percent increase above the 51,390 active wells recorded in 2017, or an average annual growth of about 2 percent. A significant portion of this increase resulted from the reactivation of existing idle wells rather than the drilling of new ones.

Active wells are distributed across California, however the majority are located in the Central Valley/Northern California sub-region. This is shown in **Exhibit 2-3.** The Central Valley/Northern California subregion has nearly 83 percent of all active wells in the state. More than 45,000 of these wells are found in just one county, Kern County. Southern California has the second largest number of wells at 9.4 percent, followed by the Central Coast (7.6 percent), the San Francisco Bay Area (0.2 percent), and the Rest of State (0.1 percent).

Exhibit 2-3
Active Wells in CA by Sub-Region 2024



Source: CA Dept of Conservation, DOGGR

Since 2017, the distribution of active wells across California has changed slightly. The Central Valley/Northern California subregion now has relatively fewer active wells, down by 0.6 percentage points, while Southern California and the Central Coast registered relative increases of 1.0 and 1.3 percentage points, respectively.

Crude Oil in California

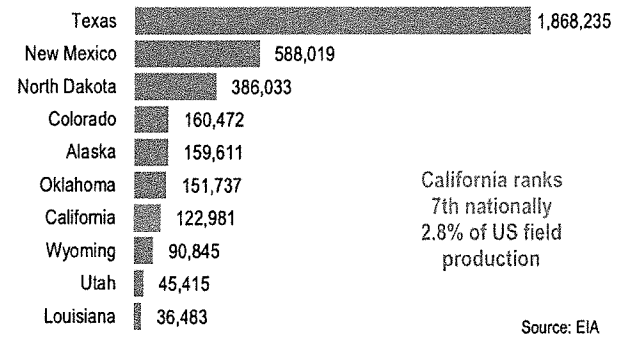
According to the Energy Information Administration (EIA), California in 2022 consumed more energy than any other state except Texas. With respect to transportation, Californians had more registered motor vehicles and traveled more vehicle miles than residents in any other state, which translated into California accounting for one-tenth of U.S. motor gasoline consumption and about one-seventh of the nation's jet fuel consumption that year.

California is highly dependent on imported energy, however. In 2023, foreign suppliers led by Iraq, Saudi Arabia, and Brazil provided three-fifths of the crude oil refined in California. California also imports more electricity than any other state, typically receiving between one-fifth and one-third of its electricity supply from outside of the state.

Oil field production in the United States totaled about 4.4 billion barrels in 2022. **Exhibit 2-4** shows the biggest oil producing states in the nation ranked according to their crude oil production that year. California produced 123 million barrels, representing 2.8 percent of total national production, which placed it 7th among all states.

10 Stanford Institute for Human-Centered Artificial Intelligence. (2024). *2024 AI Index Report.*

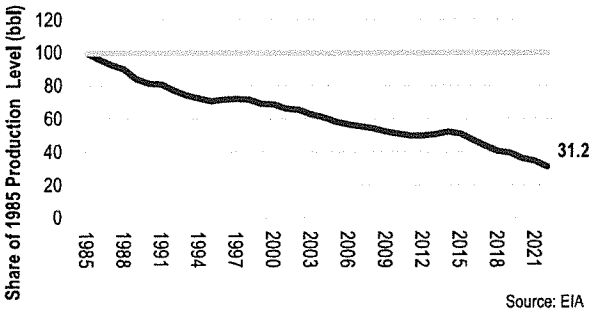
Exhibit 2-4
Crude Oil Production 2022
(Thousands of barrels)



While total U.S. oil production increased significantly between 2017 and 2022, growing from 3.4 billion barrels or just over 28 percent, California's oil production instead decreased significantly as a result of geopolitical issues and the regulatory environment. Over the same time period, California oil production dropped from 174 million barrels or more than 29 percent. It should be noted that in 2017, California was the 4th largest state in terms of production, coming behind only Texas, North Dakota and Alaska.

This is part of a long-term decline that began in the mid 1980s. In 1985, California's oil production reached its maximum at 394 million barrels, and it has declined steadily since then (**Exhibit 2-5**). California's 2022 production level of 123 million barrels was about 31 percent of its all-time high. This compares with roughly 44 percent just five years earlier.

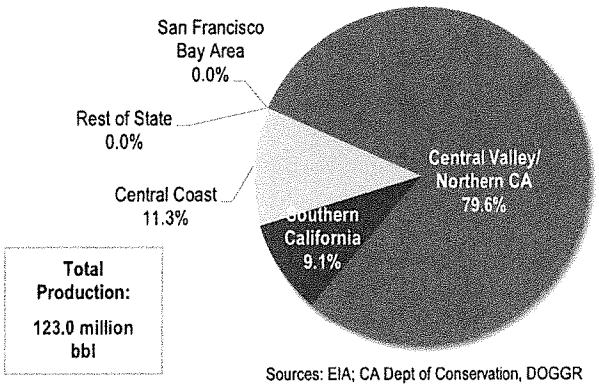
Exhibit 2-5
California Oilfiled Production 1985 to 2022
Indexed Growth (1985=100)



While crude oil production activity occurs throughout the state, the Central Valley/Northern California sub-region accounted for most of it. Nearly 80 percent of total California production in 2022 occurred in the Central Valley/Northern California sub-region. The second and third largest producing sub-regions were the Central Coast and Southern California, with 11 percent and 9 percent respectively.

The distribution of California crude oil production in 2022 according to sub-region is shown in **Exhibit 2-6.**

Exhibit 2-6
Distribution of Oil Production by Sub-Region 2022



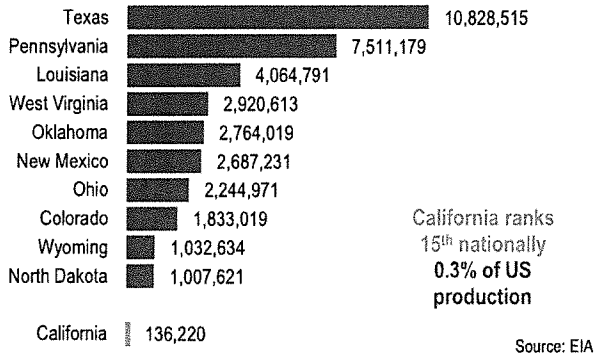
Crude oil reserves in California as of the end of 2022 were an estimated 1,492 million barrels. This represented 3.1 percent of total U.S. reserves.

Natural Gas in California

Natural gas production in the United States totaled 39.4 trillion cubic feet in 2022. This represents a 40 percent increase from the 28.1 trillion cubic feet produced in 2017. California's production of natural gas totaled 136.2 billion cubic feet in 2022, accounting for 0.3 percent of total U.S. production. California's 2022 production reflects a nearly 39 percent decrease from the 209.3 billion cubic feet it produced just five years earlier.

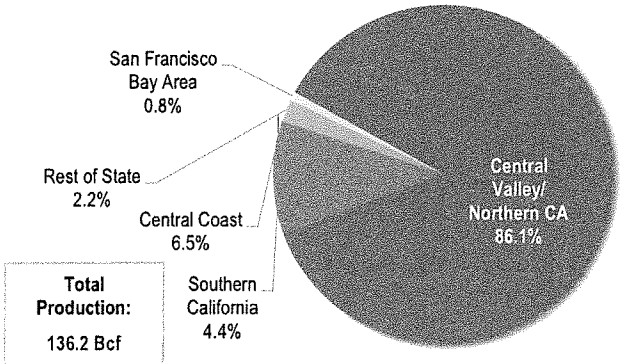
California's level of natural gas production places it as the fifteenth largest state. This was its same ranking in 2017. Texas, Pennsylvania and Louisiana were the three largest producers in 2022. Notably, Texas produced nearly 80 times the level of California. **Exhibit 2-7** displays the highest ten ranking states and California according to their total natural gas production in 2022.

Exhibit 2-7
Natural Gas Production 2022
(Cubic feet in millions)



Similar to crude oil production, the Central Valley/ Northern California sub-region accounted for just over 86 percent of total California natural gas production in 2022, followed by the Central Coast and Southern California and, producing close to 7 percent and 4 percent respectively. The distribution of California natural gas production in 2022 by sub-region is shown in **Exhibit 2-8.**

Exhibit 2-8
Distribution of Gas Production by Sub-Region 2022



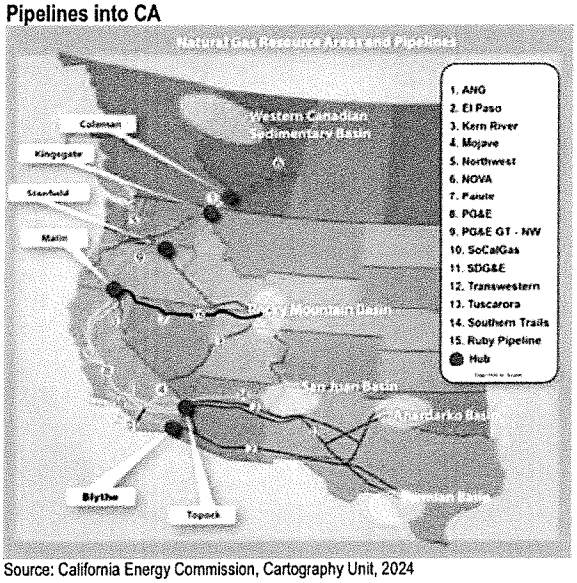
Expected future production of dry natural gas as of the end of 2022 is estimated at 1,070 billion cubic feet.

Midstream Activity

The midstream segment of the oil and gas industry is a highly integrated transmission and distribution system that exists across the United States to link upstream producers with downstream operations. Midstream operations move oil and gas from the wellhead in upstream operations to downstream refining and manufacturing operations and include processing, storage and logistics (pipeline, rail, truck, tanker, and export terminals). These same companies also move finished product from downstream operations to the market segment which includes gasoline stations and fuel dealers. Their services are fee-based

Exhibit 2-9 illustrates some of the major interstate midstream infrastructure that exists in California pertaining to natural gas transmission. This includes natural gas resource areas and interstate natural gas pipelines into California. As noted earlier, there are no interstate pipelines for crude oil or refined products into California.

Exhibit 2-9
Natural Gas Resource Areas and Interstate Natural Gas Pipelines into CA



Source: California Energy Commission, Cartography Unit, 2024

A selection of companies operating in the midstream segment in California is presented in **Exhibit 2-10.**

Exhibit 2-10
Selected Midstream Companies in California

- CALNEV Pipe Line, LLC
- Central Valley Pipeline
- Chevron Pipe Line Co
- Crimson Midstream Services, LLC
- Gas Pipeline Services, Inc.
- Gill Ranch Storage, LLC
- Kern River Gas Transmission Co.
- New Fortress, Inc.
- Phillips 66 Pipeline
- Pipe In Pipe Pacific, Inc.
- Roca Pipeline, Inc.
- Seaport Refining & Environmental, LLC
- Shell Pipeline Co.
- Wespac Midstream, LLC
- Wild Goose Storage, LLC

Downstream Activity

Downstream operations include refineries, petrochemicals and the manufacturing of petroleum lubricating oil and grease.

The refining of crude oil produces highly tradable products consumed domestically almost entirely in California and exported to global markets. Refined petroleum products include gasoline and diesel, liquefied petroleum gas (LPG), kerosene, jet fuel and fuel oils. Other products of the refining process include petrochemicals, which are used to manufacture a wide variety of different goods, including medical and personal products, fuel and lubricants, chemical products (adhesives, detergents, solvents) synthetic fabrics and materials, plastics and resins and more (see **Exhibit 2-11** for a more comprehensive listing).

Market conditions for refined petroleum products and byproducts produced in-state continue to change as a result of regulatory mandates issued to meet increasingly ambitious emissions goals. California's Cap and Trade program, Low Carbon Fuel Standard and other climate programs create requirements that collectively cost the industry and/or consumers hundreds of millions of dollars annually. Refining operations also heavily rely upon the supply of reliable electricity and recycled water in their production process. These operations are threatened when California refiners cannot ensure the future supply of each.

Recently, there have been additional efforts to restrict the amount of profit that refiners in California are allowed. SB 1322 enacted in 2022 requires all refiners of gasoline products in the state to provide monthly data about various price and volume information, such as the gross gasoline refining margin for each refinery with two or more refining facilities in the state; and the volume and price of domestic and imported crude oil. The California Energy Commission (CEC) must publish aggregated, volume weighted reports of this data, within 45 days of the end of each calendar month. Additionally, SB X1-2, which took effect June 2023, expands the monthly reports to require refinery operators to provide net gasoline refining information. It authorized the CEC to set a maximum gross gasoline refining margin and to levy penalties for exceeding it.[11]

Exhibit 2-11
Petroleum-Based Consumer Products

Medical and Personal		
antihistamines	inhalers	makeup
anesthetics	band aids	perfume
aspirin	latex gloves	contact lenses
cough syrup	syringes	lotion
vitamins	artificial limbs	diapers
Fuel and Lubricant		
gasoline	heating fuel	motor oil
diesel fuel	propane	electricity generation
Chemical Products		
pesticides	fabric softeners	brake fluid
fertilizers	cleaning chemicals	coolant
preservatives	solvents	antifreeze
Teflon	paint	
Synthetic Fabrics and Materials		
polyester	elastic	carpeting
nylon, rayon	shoes	vinyl
	upholstery	Styrofoam
Other Products		
PVC pipe	electronics	toys
shingles	plastic containers	helmets
tires	plastic bags	guitar strings
asphalt/ tar	sponges	sports equipment

Compiled by LAEDC

In order to meet demand, California refineries operate at or near maximum capacity. When refineries in the state experience unplanned outages, the price of gas jumps in response to the reduced supply, and gasoline imports increase. Production issues also directly translate into

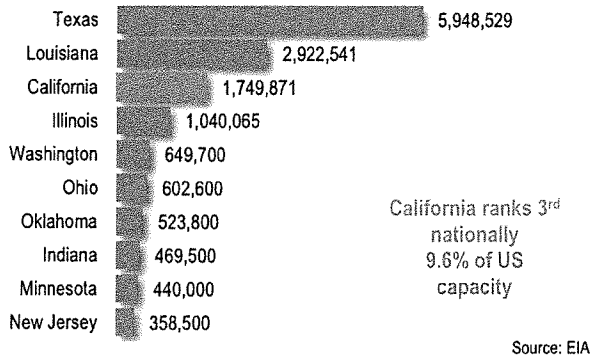
[11] https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/california-oil-refinery-cost-disclosure

price increases due to the high in-state demand for refined products and the lack of interstate pipelines into California.

California's Refineries

The petroleum refining industry has a large presence in California. In 2022, annual operable atmospheric crude oil distillation capacity in California was more than 1.7 million barrels per calendar day (bpcd.). This capacity represented about 10 percent of total U.S. capacity and placed California third among states (**Exhibit 2-12**).

Exhibit 2-12
Crude Oil Distillation Capacity 2022
Annual Operable Atmoshperic (BPCD)



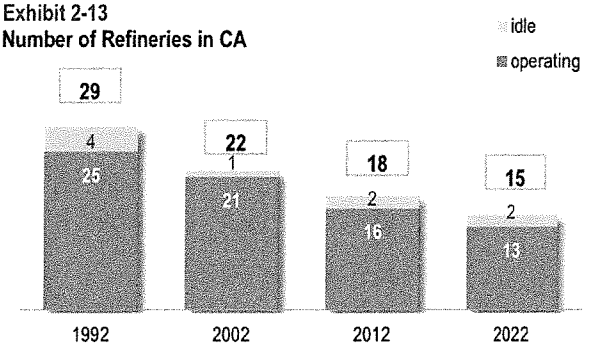
Source: EIA

From 2017 to 2022, crude oil distillation capacity in California decreased by nearly roughly 241,000 bpcd, or about 12 percent. Total distillation capacity in the United States also fell during the time period, but only by about 4 percent.

Despite the state's importance to the nation with respect to crude oil distillation capacity, the number of refineries in California has been decreasing over time. This is primarily due to the state's strict environmental regulations, which require refineries to make large expenditures on equipment, modifications and upgrades. Operations that are unable to fund these investments, especially older and smaller refining facilities, have ceased operations. These regulations also affect the permitting of new facilities, and therefore it is unlikely that the state will see any potential increase in oil refining capacity in the future to meet upcoming needs.

The decline in the number of refineries in California over the past 30 years is shown in **Exhibit 2-13.** In 1992, there were 29 refineries in the state, 25 of which were operable and 4 of which were idle. As of 2022, the number of refineries has effectively been halved. That year, there were 15 refineries, 13 of which were operational and two of which were idle.

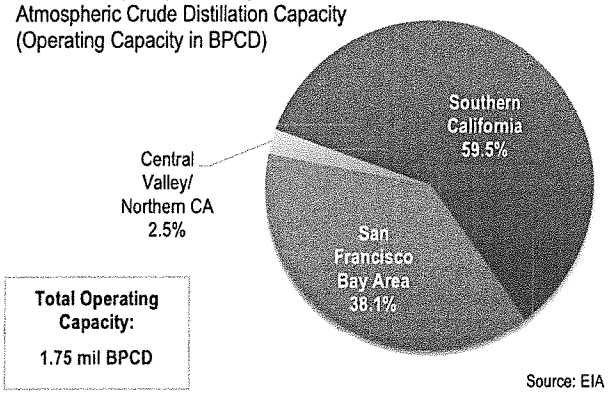
Exhibit 2-13
Number of Refineries in CA



Source: EIA

These refineries are located largely within two sub-regions: Southern California (primarily Los Angeles County) and the San Francisco Bay Area. The three largest refineries in the state are located in El Segundo, Richmond and Carson. **Exhibit 2-14** displays crude oil refining capacity in California by sub-region in 2022. Southern California accounts for more almost 60 percent of the state's refining capacity, and the San Francisco Bay Area accounts for another 38 percent. A small portion of refining occurs in the Central Valley/Northern California subregion.

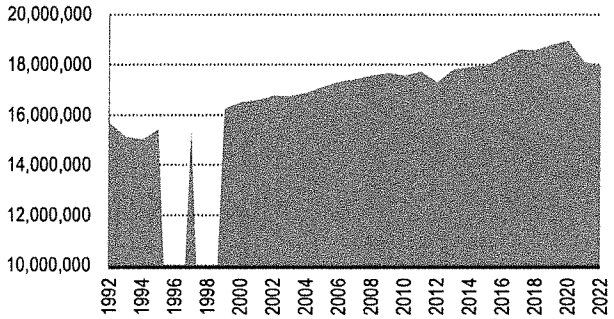
Exhibit 2-14
Refining Capacity in CA by Sub-Region 2022
Atmospheric Crude Distillation Capacity
(Operating Capacity in BPCD)



Source: EIA

While the number of refineries has been declining in both California and the nation as a whole, expansions of existing operations and increases in efficiencies have for the most part resulted in increased capacity nationwide **(Exhibit 2-15).** U.S. refining capacity increased relatively steadily over the past 30 years, with the notable exception coming in 2021 and 2022. Here refining capacity dropped in the aftermath of the COVID-19 pandemic.

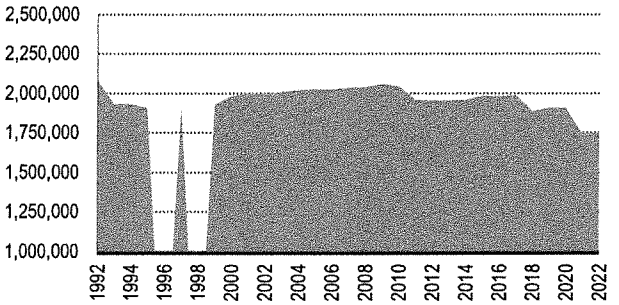
Exhibit 2-15
Annual Operating Refinery Capacity in U.S.
Atmospheric Crude Distillation Capacity (BPCD)



Note: Data unavailable for 1996 and Source: EIA

However, unlike the national experience, total operating capacity in California did not see a similar increase over the past 30 years. Instead, the state's refining capacity essentially has been flat since around 2000, with occasional step reductions at different points. California also saw a noticeable drop in capacity after 2020. **(Exhibit 2-16).**

Exhibit 2-16
Annual Operating Refinery Capacity in California
Atmospheric Crude Distillation Capacity (BPCD)



Note: Data unavailable for 1996 and Source: EIA

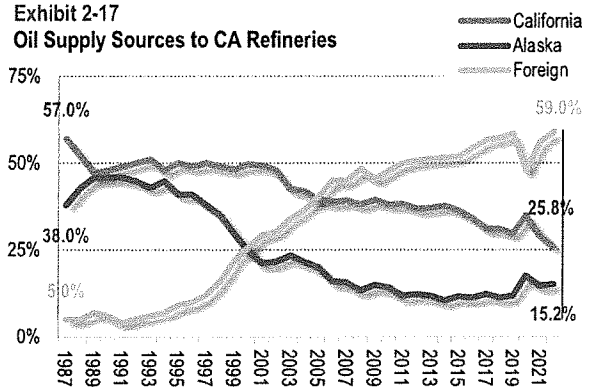
Further reductions of the in-state supply of crude oil and refined petroleum products and byproducts could impact thousands of businesses that depend on these products in their production processes. This could affect production costs and lead to higher prices of end products—which themselves may be used in other industries as inputs into production.

Oil Supply Sources

The requirements for fuel consumed in California are highly specific. Due to limits placed on in-state production and since California has no interstate oil pipelines, California refineries import about 75 percent of the state's crude oil needs from Alaska and outside the United States. Production volumes from Californian and Alaskan sources have been declining over the years, leading to increasing amounts of foreign crude being delivered to marine terminals in the San Pedro and San Francisco ports to augment the supply of crude which is constrained locally.

Exhibit 2-17 shows the percentage breakdown by source of the supply of crude oil to petroleum refineries in California from 1987 through 2022. In 2022, crude oil from foreign sources represented 59 percent of the oil supplied to refineries in the state. Foreign sources and out-of-state domestic sources combined account for 74 percent of the total supply of crude oil to petroleum refineries in California. Only 26 percent of what is refined in the state was locally sourced compared to 31 percent in 2017.

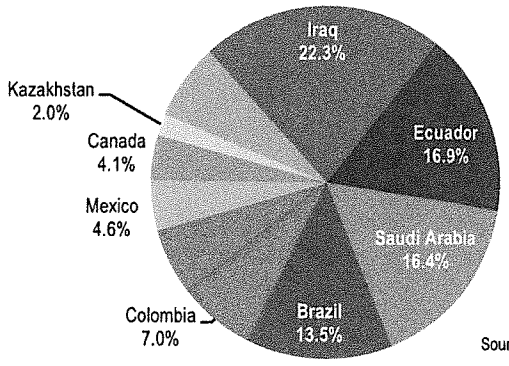
Exhibit 2-17
Oil Supply Sources to CA Refineries



* CA totals may also include minor amounts from Gulf Coast States
Source: CEC, aggregated from PIRRA data

The specificity of the requirements for fuel and the growing reliance upon foreign crude oil sources leave California vulnerable to exports from specific countries. **Exhibit 2-18** presents the distribution of foreign crude oil sources for 2022. Disruptions from these countries

Exhibit 2-18
California's Sources of Foreign Crude in 2022



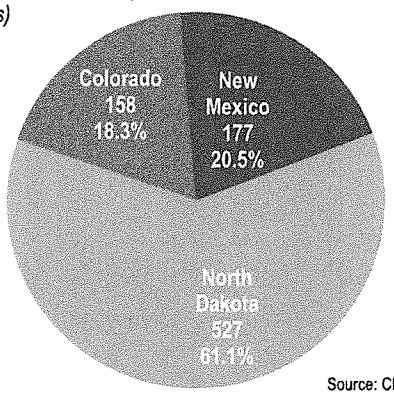
Source: CEC

could result in short-term fluctuations in oil prices and supply shocks.

In 2022, Iraq was the primary foreign supplier of crude oil to California, providing 22 percent of foreign imports. Ecuador was second at 17 percent, and Saudi Arabia third at 16 percent. This reflects a change since 2017, when Saudi Arabia was the primary supplier (29 percent), followed by Ecuador (20 percent) and Colombia (14 percent).

California imports a small portion (less than 1 percent) of its crude oil by rail. In 2022, California imported 862,000 barrels of oil from just three states: North Dakota, New Mexico and Colorado (**Exhibit 2-19**).

Exhibit 2-19
2022 Crude Imports to California by Rail
(Thousands of barrels)



Source: CEC

Crude-by-rail imports have decreased significantly from their high point of 8.2 million barrels in 2019. That year, Canada supplied 64 percent of the imports by rail. In 2017, Canada provided 59 percent of the 3.2 million barrels of crude oil was imported by rail.

Seasonal Supply Vulnerabilities

Each year, California transitions from winter-grade to spring-grade gasoline and from spring-grade to summer-grade gasoline. The cost to manufacture the warmer weather blends is higher than that to manufacture the winter-blend. Regardless of the blend, the cost of manufacturing gasoline to state specifications exceeds that of conventional gasoline used outside of California.

Blendstock transitions also reveal price volatility. Immediately preceding a transition from one seasonal gasoline blend to another, prices will either increase or decrease according to inventory levels; they will rise when inventory is low to delay a badly timed purchase or will drop to accelerate sales of the current blend if inventory is deemed high.

In the event that refining capacity is reduced further, and local production cannot meet local demand due to more aggressive restrictions, additional product must be imported into the area.

There are several refineries outside of the state that can produce California gasoline, they include the state of Washington and the U.S. Gulf Coast, and abroad sources include Eastern Canada, Finland, Germany, the U.S. Virgin Islands, the Middle East and Asia.

Costs for petroleum and petrochemical products produced out of state typically are higher due to increased shipping costs as well as costs associated with out-of-state producers reconfiguring and refitting facilities. Refitting facilities is a costly and labor-intensive undertaking that is required to accommodate California's specific blends of low sulfur gasoline and diesel.

These additional costs are passed on to end users, both industrial and consumer. Dependent industries that use petroleum and petrochemical products as inputs in production or are heavily reliant upon these products in the provision of a service, such as transportation industries, may not be able to absorb the cost increases. Consumers will feel cost increases that cannot be absorbed by the industry at the pump or when they purchase transportation services or petroleum-based end products.

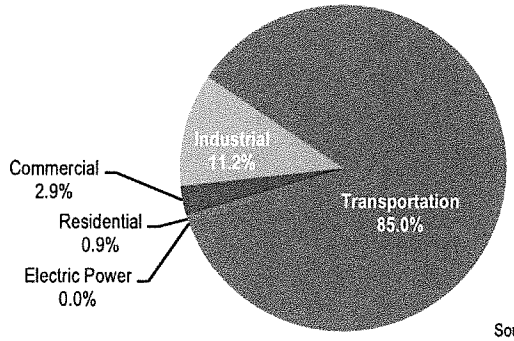
Market Activity

The market segment of the oil and gas industry includes industries that deliver petroleum and natural gas products to the end-user. This segment includes gasoline stations, natural gas distribution and fuel dealers, who retail liquefied petroleum gas (LPG). Industry trends in this segment are unique to each product sold; therefore, they are discussed separately.

Petroleum

Californians spent an estimated $123.8 billion on 628 million barrels of petroleum in 2022. About 85 percent of the expenditures on petroleum in the state go towards transportation, as shown in **Exhibit 2-20.** Approximately 11 percent goes to industrial uses, 3 percent to commercial uses, and 1 percent to residential. A very small percentage is used for electrical power.

Exhibit 2-20
2022 Distribution of CA Expenditures on Petroleum
By End-Use Sector



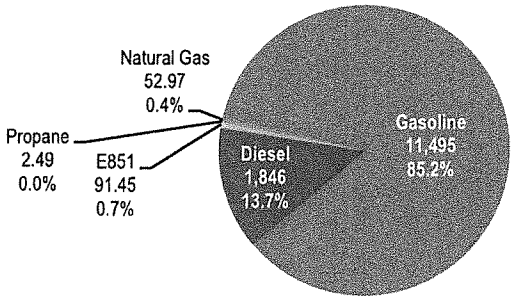
Source: EIA

The state accounted for 11.8 percent of U.S. expenditures and 8.6 percent of U.S. consumption of petroleum in 2022. California was ranked the second highest state with respect to the total barrels of petroleum consumed, behind Texas (1.5 billion barrels). It is followed by Louisiana (389 million barrels), Florida (356 million barrels) and New York (256 million barrels).

Fuel Stations

There were an estimated 10,742 retail fuel stations in California in 2022. These retail outlets are estimated to have sold 11.5 billion gallons of gasoline and 1.8 billion gallons of diesel (**Exhibit 2-21**). The demand for gasoline and has decreased significantly in the aftermath of the COVID-19 pandemic, however the demand for diesel fuel has increased. In 2022, the total number of vehicle miles travelled in California measured 315,244 million, down from the 343,862 million in 2017.

Exhibit 2-21
Retail Sales Volumes in California 2022
(Million gallons)

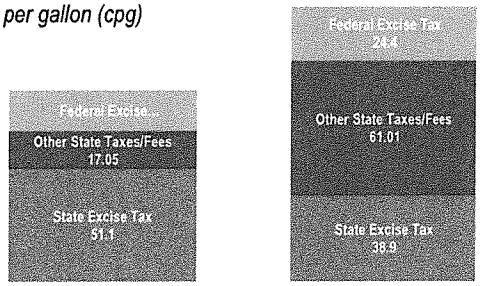


Source: CEC

Gasoline stations are affected by fluctuations in the price of oil and refined products; volatile prices can affect industry revenues and profits. Regulatory compliance for gasoline stations includes tank testing, soil analysis and remediation.

Taxes levied on the purchase of fuels and natural gas in California are significant. Taxes that apply to the purchase of fuel include sales and use, state and federal excise and an Underground Storage Tank (UST) fee of 2 cents per gallon (cpg.). According to the American Petroleum Institute, an estimated 86.55 cpg of gasoline and 124.31 cpg of diesel went towards fuel taxes in California in 2022 (**Exhibit 2-22**), placing California as the highest taxed state in the nation for gasoline and diesel fuel.[12]

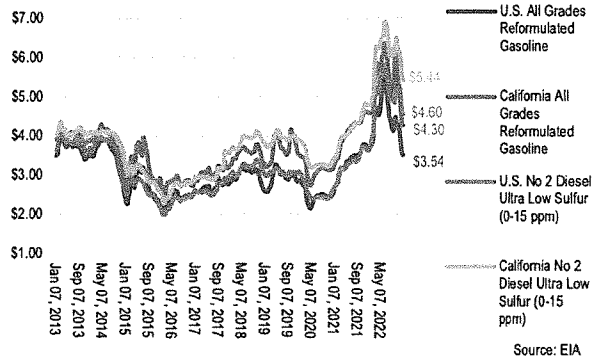
Exhibit 2-22
California Motor Fuel Taxes, 2022
Cents per gallon (cpg)



Source: API

Additional regulatory costs also exist in California (i.e. reformulation, Low Carbon Fuel Standard, and the Cap-and-Trade program limiting GHG emissions). The result is an increase in the price spread of motor fuels between California and the national average. **Exhibit 2-23**

Exhibit 2-23
Price of Gasoline and Diesel
California versus U.S. average



Source: EIA

[12] https://www.api.org/-/media/files/statistics/state-motor-fuel-taxes-charts-january-2022.pdf

demonstrates these differences for the ten years from 2013 through 2022.

Natural Gas

Natural gas distribution is included in the market segment of the industry as it markets natural gas to the end user. End-use sectors include not only residential users, but industrial and commercial users as well. Natural gas is also used in transportation and in electric power generation as the state completes its transition from coal to natural gas as a cleaner alternative. The EIA found that natural gas replacing the use of coal for electricity generation has resulted in significant reductions in sulfur dioxide (SO2) and carbon dioxide (CO2) emissions over the last decade.

Current natural gas utilities with service areas in California are listed in **Exhibit 2-24.**

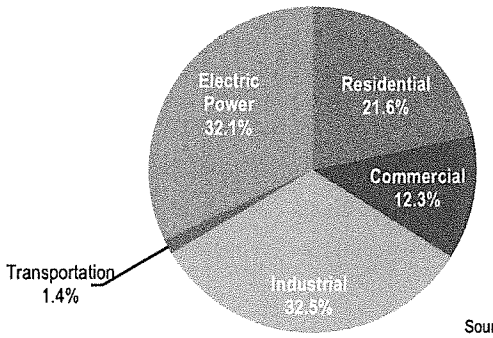
Exhibit 2-24
Natural Gas Utilities with Service Areas in California

- City of Long Beach Gas and Oil Department
- City of Palo Alto Gas Department
- Pacific Gas and Electric Company (PG&E)
- San Diego Gas & Electric (SDG&E)
- NV Energy
- Southern California Gas Company (SoCalGas)
- Southwest Gas Corporation

Source: California Energy Commission

Californians spent an estimated $26.5 billion on 2,059 billion cubic feet of natural gas in 2022. The largest expenditures were made by the industrial sector and the electric power sector, which together represented about two-thirds of all expenditures **(Exhibit 2-25).** Next was the residential sector (22 percent), followed by the commercial sector (12 percent) and vehicle fuel (1 percent).

Exhibit 2-25
2022 Distribution of CA Expenditures on Natural Gas
By End-Use Sector

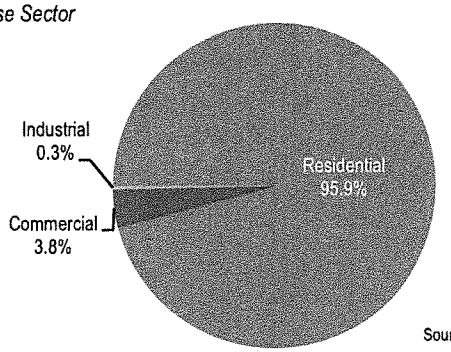


Source: EIA

In 2022, California accounted for 9.8 percent of U.S. expenditures on natural gas while only accounting for 6.4 percent of U.S. consumption. Some of this discrepancy is attributable to the residential side. Just over 60 percent of home heating in the state used natural gas, compared to 46 percent for the United States. Additionally, Californians paid a residential price for natural gas of $20.15 per thousand cubic feet compared to $14.75 for the United States.

The number of natural gas consumers in California was nearly 11.8 million in 2022, up from 11.5 million in 2017. Residential consumers accounted for nearly 96 percent of the total number of natural gas consumers in the state **(Exhibit 2-26).**

Exhibit 2-26
2022 Distribution of CA Natural Gas Consumers
By End-Use Sector



Source: EIA

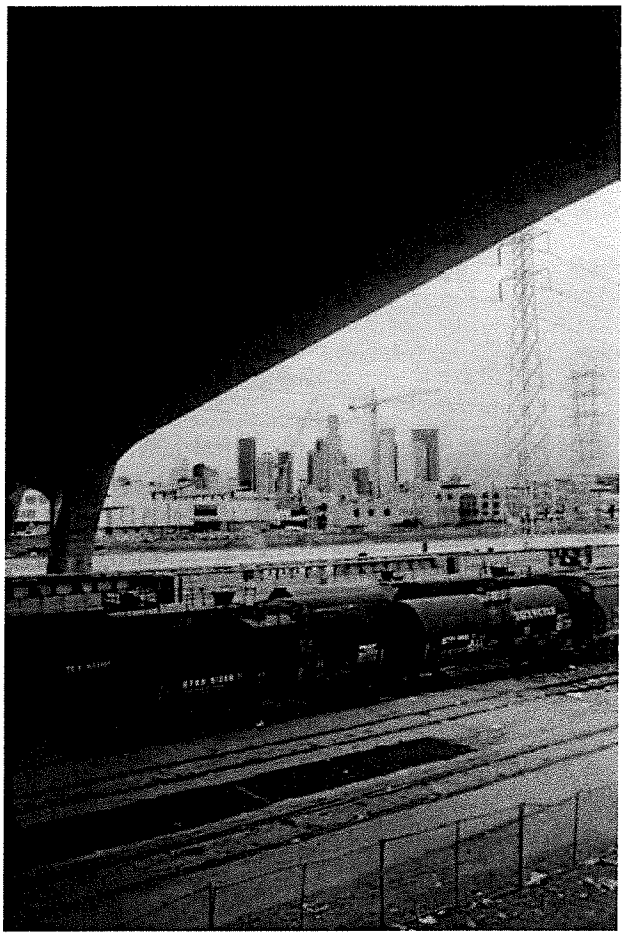
Residential consumption includes natural gas used in private households for heating, air-conditioning, cooking, water heating, and other household uses. Commercial consumption includes establishments or agencies predominantly engaged in the sale of goods or services, such as hotels, restaurants, wholesale and retail stores and other service enterprises. This category also includes non-manufacturing activities of government agencies (local, state and federal). Industrial consumption includes establishments that use natural gas for heat, power, or chemical feedstock in manufacturing, mining or other mineral extraction, agriculture, forestry, and fisheries. Operations with generators that produce electricity and/or thermal output in support of these listed industrial activities are also included in industrial consumption.

While the number of residential consumers of natural gas far exceeds the number of commercial and industrial consumers, the average annual consumption per consumer for commercial and industrial establishments exceed that of an average household; the average annual consumption per commercial consumer and per

industrial consumer in California in 2022 was 555 Mcf and 18,683 Mcf respectively.

Taxes are imposed on the consumption of natural gas, through a natural gas surcharge paid by consumers to their utility service provider. The rate is determined by service territory and customer class (end-use).

In California, an excise tax also applies to compressed natural gas (CNG), liquefied natural gas (LNG) and propane used to operate a vehicle. The tax can be paid either through a flat rate fee based on vehicle weight, or on a per gasoline gallon equivalent. (GGE) for CNG or diesel gallon equivalent (DGE) for LNG and propane.



3 Economic and Fiscal Contribution of the Industry in California

The extraction, production, refining, and manufacturing of petroleum products generate highly tradable goods that are consumed domestically and exported globally, resulting in substantial revenues, well-paying jobs with benefits, and considerable fiscal contributions at all levels of government.

In California, the oil and gas industry plays an important role in the state economy. It contributes significantly to the state's GDP and supports a wide range of sectors, including manufacturing, transportation, and services. The industry's investments in infrastructure, equipment, local hiring, and refined product sales drive further economic activity, supporting hundreds of thousands of jobs statewide. This generates billions in annual tax revenues for state and local governments, funding essential public services such as education, healthcare, and infrastructure development.

As part of this study, a customized input-output model was developed for the state to estimate the economic contribution of the oil and gas industry in California. The models measure economic benefits through jobs, labor income, economic output, Gross State Product (or Gross Regional Product), and fiscal revenues paid to state and local, as well as federal governments. Additional details on the methodology used in this report can be found in the Appendix.

Direct Economic Activity

Direct activity associated with the oil and gas industry is the direct contribution to the economy of the industry in terms of employment, labor income and value added.

Direct employment of the oil and gas industry includes all individuals whose employment is directly related to business establishments with activities that fall within the NAICS codes included in the industry definition. Measured on a job-count basis regardless of the number of hours worked, it includes full-time, part-time, permanent and seasonal employees and the self-employed.[13]

Exhibit 3-1 displays the estimated direct employment associated with each component industry in the oil and gas industry in California in 2022. Direct employment estimates in this report represent activity which would be lost to the economy without the presence of the oil and gas industry in California.

Exhibit 3-1
Oil and Gas Industry Employment
California 2022

Industry Category	Direct Employment (jobs)
Upstream	22,750
Midstream	23,070
Downstream	10,100
Market	92,220
Oil and Gas Industry Employment	**148,140**
Percent of California Total Employment	*0.6%*

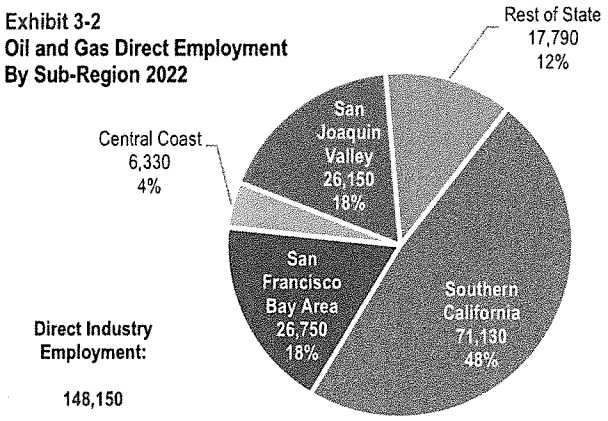
Note: Includes non-employers, independent contractors, and royalty earners
Source: Estimates by LAEDC

The oil and gas industry in California provided over 148,100 jobs in 2022, including independent contractors and payroll employees. Upstream industries, which include oil extraction, drilling, support activities, and oil and gas field machinery manufacturing, employed 22,750 people, making up 15.4% of total industry employment. Midstream industries, including pipeline construction, petroleum product wholesaling, and pipeline transportation, employed 23,070 workers, or 15.6% of total. Downstream industries, encompassing petroleum refining, lubricating oil and grease manufacturing, and petrochemical manufacturing, accounted for 10,100 jobs (or 6.8%). Market Industries, which include natural gas distribution, fuel dealers, and gasoline retail, employed 92,220 workers, making up the largest share (62.3%) of the industry workforce.

[13] The size of workforce in the oil and gas industry is hard to quantify, as there are a significant number of temporary and contingent, or contract, workers. These workers may live outside the area where they are performing their work duties. Data reported according to these workers' mailing address, such as nonemployer data, will attribute these workers not by where their work is taking place, but by their associated address, which leads to potential overcounting and undercounting of contingent workers at the county-level and sub-regions. A small labor leakage may take place in state-level data as well, due to work contracted with companies from outside of California.

Exhibit 3-2 shows the distribution of estimated direct oil and gas industry employment by sub-region in 2022. While the number of wells, and both oil and gas production levels are highest in the Central Valley/ Northern California region, over half of all industry employment is in Southern California.

Exhibit 3-2
Oil and Gas Direct Employment By Sub-Region 2022



Sources: Estimates by LAEDC

Labor income in the oil and gas industry is the value of all earnings received by payroll employees, contract workers and other proprietors, including benefits such as health insurance, pension plan contributions, and royalties. Total labor payments by component industry are presented in **Exhibit 3-3.**

Exhibit 3-3
Oil and Gas Industry Labor Income
California 2022

Industry Category	Direct Labor Income ($ millions)
Upstream	1,868
Midstream	2,559
Downstream	2,827
Market	15,791
Oil and Gas Industry Labor Income	**23,045**
Percent of California Total Labor Income	*1.1%*

Note: Includes non-employers, independent contractors, and royalty earners
Source: Estimates by LAEDC

Market industries were the largest contributors to labor income within California's oil and gas sector, generating $15.8 billion, or 68.5% of the industry's total labor income, reflecting their significant share of employment. Downstream and midstream industries contributed $2.8 billion (12.3%) and $2.6 billion (11.1%), respectively. Upstream industries added $1.9 billion, representing 8.1% of the total. In total, the oil and gas industry provided $23 billion in labor income, which is equivalent to 1.1% of California's overall labor income. ❖

Total Economic Contribution

The total economic contribution of the oil and gas industry in California includes indirect and induced activity in addition to the direct activity already identified. *Direct activity* includes the materials purchased and the employees hired by the industry itself. *Indirect effects* are those which stem from the employment and business revenues motivated by the purchases made by the industry and any of its suppliers. *Induced effects* are those generated by the spending of employees whose wages are sustained by both direct and indirect spending. These direct, indirect and induced effects combined result in a considerable contribution to the California economy, which is presented in **Exhibit 3-4.**

Exhibit 3-4
Total Economic Contribution of Oil and Gas Industry
California 2022*

Employment (jobs):		
Direct	148,150	
Indirect	223,850	
Induced	164,770	
TOTAL		**536,770**
Percent of California Total Employment		*2.1%*
Labor income ($ millions):		
Direct	23,045	
Indirect	19,122	
Induced	11,199	
TOTAL		**53,366**
Percent of California Total Labor Income		*2.5%*
Value added ($ millions):		
Direct	117,520	
Indirect	28,513	
Induced	20,014	
TOTAL		**166,048**
Percent of California Total GDP		*4.6%*
Output ($ millions):		
Direct	257,750	
Indirect	48,342	
Induced	31,903	
TOTAL*		**337,995**
Percent of California Total Output		*5.7%*

Note: Includes royalty earners
Source: Estimates by LAEDC

It is estimated that the activities related to the oil and gas industry in California in 2022 generated value added equaling $166 billion, approximately 4.6 percent of the state's GDP of $3.6 trillion. The industry contributed 536,770 jobs, or 2.1 percent of the state total, with labor income of over $53 billion, accounting for 2.5 percent of all labor income earned in the state.

Industry Distribution

The total economic contribution is achieved through activity occurring across a wide range of industry sectors via indirect and induced effects. These effects capture the economic activity created in other sectors through purchases of goods and services made in the industry's supply chain and through the purchases of goods and services made by employees.

The distribution of the total employment, labor income and value-added contribution among industry sectors is presented in **Exhibit 3-5.**

Exhibit 3-5
Total Economic Contribution of Oil and Gas Industry by Sector
California 2022

	Jobs	Labor Income ($ millions)	Output ($ millions)
Ag, forestry, fish & hunting	640	$34.6	$104.9
Mining	21,950	$1,789.6	$18,995.1
Utilities	38,060	$10,350.1	$56,575.8
Construction	19,180	$1,562.8	$4,122.1
Manufacturing	15,970	$3,342.5	$129,360.0
Wholesale trade	23,610	$2,727.2	$41,521.7
Retail trade	76,230	$6,790.0	$17,764.2
Transportation and warehousing	51,260	$3,656.7	$9,923.2
Information	5,490	$1,085.3	$4,537.7
Finance and insurance	27,750	$2,802.5	$9,265.4
Real estate and rental	23,960	$1,553.9	$10,866.6
Professional, scientific technical	51,090	$5,595.0	$11,076.9
Management of companies	9,910	$1,507.0	$2,694.3
Administrative and waste services	54,730	$3,243.3	$6,872.4
Educational services	7,150	$425.9	$648.9
Health and social services	35,030	$2,669.2	$4,507.4
Arts, entertainment and recreation	7,020	$364.6	$766.6
Accommodation and food services	31,280	$1,260.9	$3,287.0
Other services	29,490	$1,712.4	$2,988.1
Government	6,970	$892.0	$2,116.5
Total	**536,770**	**$53,365.5**	**$337,995.0**

Source: Estimates by LAEDC

Of the 536,770 jobs supported, over 14 percent were in retail trade (which includes gas stations and fuel dealers), over 9 percent in transportation and warehousing (which includes pipeline transportation), just over 7 percent were in the utilities sector (which includes natural gas distribution and electric power generation and transmission), and over 4 percent were in the wholesale sector (which includes petroleum bulk stations and terminals). However, virtually all industry sectors receive a positive economic impact from the oil and gas industry, including administrative and waste services, professional, scientific and technical services, health and social services, accommodation and food services, finance and insurance, mining, real estate, and construction.

A description of the industry sectors is provided in the Appendix. ❖

Public Revenues

The oil and gas industry faces a high tax burden, incurred by both businesses operating within the industry and by consumers. The production, refining, distribution, retail and consumption of oil and gas all face taxes levied by local, state and federal governments.

Ad Valorem:
In California, ad valorem taxes for the oil and gas industry are levied at the county level based on the fair market value of mineral properties, such as proved reserves, and are applied annually. While the base rate for property taxes across California is one percent of the assessed value, local counties may add additional rates to fund voter-approved debts. Unlike most other oil-producing states, California taxes oil and gas reserves while still in the ground, even if the resources are not being actively produced, which ensures counties receive consistent revenues. These funds are typically allocated to public services, including education and safety.

Production:
California applies a small statewide assessment on oil and gas production, which funds the Department of Conservation's Geologic Energy Management Division (CalGEM) and other state entities. Established each June, the assessment rate is based on CalGEM's budget projection for the upcoming fiscal year and the total oil and gas production in the previous calendar year. The rate is imposed per barrel of oil and per 10,000 cubic feet of natural gas. For the 2024/25 fiscal year, the assessment rate is $1.2156 per equivalent barrel, calculated from CalGEM's $153.8 million budget divided

by 126.5 million equivalent barrels produced. In 2023/24, the rate was $1.0107.[14]

State and Local Excise Taxes:
Excise taxes are levied on the purchase of certain goods and are paid by the end user at the time of sale. Excise taxes in California for oil and gas products are levied at multiple levels and vary by fuel type. For gasoline, the state excise tax has increased to 59.6 cents per gallon as of July 2024, while diesel fuel is taxed at 45.4 cents per gallon. Jet fuel and aviation gasoline are taxed at 2 cents and 18.6 cents per gallon, respectively. These rates are adjusted annually in line with the California Consumer Price Index to reflect inflation.[15]

Federal Excise Tax:
The federal government imposes an excise tax on consumption of various types of fuel, including gasoline, aviation gasoline, diesel, and jet fuel. This tax also applies to compressed natural gas (CNG) used in vehicles. The rates for these taxes vary based on the fuel type. For instance, as of July 1, 2024, the federal excise tax on gasoline is 18.4 cents per gallon, while diesel is taxed at 24.4 cents per gallon.[16]

Sales Tax:
Sales tax on fuel in California is applied differently for gasoline and diesel and is assessed by both state and local governments. Gasoline is subject to a 2.25% state sales tax, with additional local district taxes that vary by location, resulting in rate differences across counties and even within cities. Diesel fuel sales carry a higher state sales tax rate, which is set at 13% from October 1, 2023, to June 30, 2024, with additional district taxes also applied. Consumers pay the sales tax on fuel directly at the point of sale.[17]

Lease and Royalty Payments:
To extract oil and gas on federal lands, operators must secure leases from the federal government, often through competitive auctions where leases are awarded to the highest bidders. Winning bidders make an upfront "bonus" payment, followed by annual rental payments, and then pay royalties based on the amount of production. Recent reforms by the Bureau of Land Management (BLM) raised royalty rates on new leases from 12.5% to 16.67%. Additionally, minimum rental rates have been increased to $3 per acre for the first two years, with incremental increases in later years.[18]

The State Lands Commission's Mineral Resources Management Division is charged with the management and administration of oil and gas, geothermal and other mineral resources on state-owned public lands in California. In addition to initial bonus lease payments, lease rent and royalties apply. As of 2022, there are 11 active offshore oil-producing leases and 5 inactive leases. These state-managed leases contribute to royalty revenues, primarily from production occurring offshore near Long Beach.[19]

Other State and Local Taxes and Fees:
Additional taxes and fees relevant to the oil and gas industry in California include the following:

International Fuel Tax Agreement (IFTA)

As of July 1, 2024, California's International Fuel Tax Agreement (IFTA) diesel tax rate is set at $1.023 per gallon for diesel fuel. This figure represents a slight reduction from the previous rate of $1.089 per gallon in early 2024. The new rate includes both a diesel fuel tax of $0.454 per gallon and an excise tax of $0.569. Commercial carriers will continue to report their fuel usage and miles traveled by jurisdiction in quarterly filings under IFTA, which redistributes these tax revenues according to mileage reported across different jurisdictions.[20]

Underground Storage Tank Maintenance Fee

The Underground Storage Tank (UST) Maintenance Fee, administered by the California Department of Tax and Fee Administration (CDTFA), is charged to owners of USTs used for petroleum storage. Assessed on a per-gallon basis at a rate of $0.02 per gallon since January 1, 2015, this fee generates revenue for the Underground Storage Tank Cleanup Fund within the state's General Fund. The purpose of the fund is to provide financial assistance for remediating environmental damage caused by tank leaks,

[14] CA Department of Conservation. https://www.conservation.ca.gov/calgem/for_operators/Pages/Assessments.aspx#:~:text=There%20is%20no%20statewide%20severance%20tax%20on%20oil,assessor%20in%20the%20county%20you%20are%20interested%20in.
[15] California Department of Tax and Fee Administration (CDTFA). https://cdtfa.ca.gov/formspubs/L932.pdf.
[16] EIA. https://www.eia.gov/tools/faqs/faq.php?id=10&t=10
[17] EIA. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.eia.gov%2Fpetroleum%2Fmarketing%2Fmonthly%2Fxls%2Ffueltaxes.xlsx&wdOrigin=BROWSELINK
[18] U.S. Department of the Interior Bureau of Land Management. https://www.blm.gov/sites/default/files/docs/2024-04/BLM-Final-Onshore-Oil-and-Gas-Leasing-Rule-General-Fact-sheet.pdf.
[19] California State Land Commission. https://slcprdwordpressstorage.blob.core.windows.net/wordpressdata/2022/05/04-23-22_61-Presentation.pdf.
[20] CDTFA. https://www.cdtfa.ca.gov/formspubs/L945.pdf.

covering third-party damages and liabilities, and helping owners meet federal financial responsibility standards.[21]

Oil Spill Prevention and Administration Fees

There is a statewide oil spill prevention fee of 9.4 cents per barrel of crude oil and petroleum products as of July 2024, which supports California's environmental protection efforts. The OSPA fee must be paid by the owners of crude oil and petroleum products. Marine terminal operators and refinery operators are responsible for collecting the OSPA fee from the owners. Starting on July 1, 2023, the OSPA fees are updated annually in accordance with changes in the California Consumer Price Index.[22]

Oil Spill Response Fee

This fee, at the rate of $0.25 per barrel, applies to crude oil and petroleum products received at marine terminals, moving through marine pipelines, or received at California refineries. The fee is not collected currently as the fund has reached its $50 million maximum with January 1991 filing. The state would resume collecting this fee in the event that this fund is accessed.[23] ❖

Total Fiscal Contribution

Given this background, the economic activity associated with the oil and gas industry in California in 2022 is estimated to have generated $47.9 billion in state and local taxes and $16.3 billion in federal taxes. The disaggregation of taxes by type and level of government is shown in **Exhibit 3-6.**

Of state and local government revenues, nearly over $21 billion was received from sales and excise taxes (including those paid on the consumption of oil and gas products), about $17 billion was received from property taxes paid by households and businesses and ad valorem taxes about $5 billion was received from personal and corporate income taxes.

Of federal taxes, $0.9 billion in taxes was earned in excise taxes, $6.3 billion from personal income taxes, $2.8 billion in taxes on corporate income and $5.3 billion in social insurance payments. ❖

Exhibit 3-6
Detailed Fiscal Contribution of O&G Industry

By Type of Tax ($ millions):	
Personal income taxes	$8,466.1
Social insurance	5,534.4
Sales and excise taxes	21,734.1
Property taxes	17,081.2
Corporate profits taxes	5,685.8
Special Assessments	784.9
Other taxes	3,456.6
Fees, fines and permits	1,512.7
TOTAL	**$64,255.8**
By Type of Government ($ millions):	
Federal	$16,315.5
State	24,130.2
County	6,574.9
Cities	17,235.2
TOTAL	**$64,255.8**

Sources: IMPLAN; estimates by LAEDC

Economic Contribution by Segment

The total economic impact of the oil and gas industry in California in 2022 was just presented; however, each segment of the industry (upstream, midstream, downstream and market industry) is associated with its own distinct set of activities. These direct activities extend throughout the California economy with different magnitudes.

Exhibit 3-7 identifies the total economic contribution (direct, indirect and induced) of each segment of the industry as defined in the first section of this report. The industry segment with the largest impacts for employment, labor income, and value-added is the market segment, which includes natural gas distribution, fuel dealers, and gasoline stations. The downstream industry segment has the largest impacts for output, this segment includes refineries and petrochemical manufacturing.

[21] CDTFA. https://www.cdtfa.ca.gov/taxes-and-fees/ust-maint-fee-faq.htm
[22] CDTFA. https://cdtfa.ca.gov/formspubs/L936.pdf
[23] CDTFA. https://www.cdtfa.ca.gov/taxes-and-fees/special-taxes-and-fees-tax-rates/#oilspillfee.

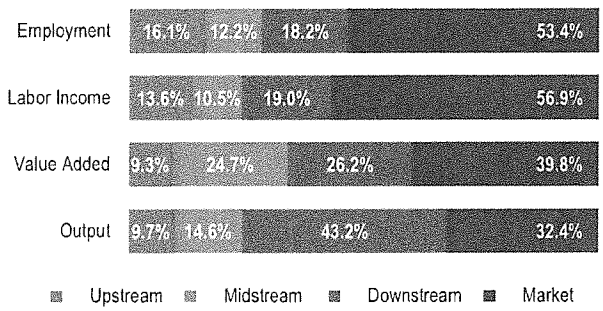
Exhibit 3-7
Total Economic Contribution by Industry in California 2022

Total Employment Impact (jobs):		
Upstream	86,680	
Midstream	65,440	
Downstream	97,820	
Market	286,830	
TOTAL		**536,770**
Total Labor Income ($ billions):		
Upstream	$7.2	
Midstream	$5.6	
Downstream	$10.1	
Market	$30.4	
TOTAL		**$53.4**
Total Value Added ($ billions):		
Upstream	$15.4	
Midstream	$41.1	
Downstream	$43.6	
Market	$66.0	
TOTAL		**$166.0**
Total Output ($ billions):		
Upstream	$32.8	
Midstream	$49.5	
Downstream	$146.1	
Market	$109.6	
TOTAL		**$338.0**

Source: Estimates by LAEDC

Exhibit 3-8 shows the distribution of the total economic impact of each segment of the industry, allowing for the comparison of each segment's share of the larger oil and gas industry's total economic contribution.

Exhibit 3-8
Distribution of Total Impacts by Industry Segment
California 2022



In terms of employment, associated labor income, and value added, market activity (retail and distribution) contributes a larger share compared to other segments, contributing 53 percent, 57 percent, and 40 percent each. When it comes to total output, downstream activity (refineries and petrochemicals) contributes a larger share, accounting for 43 percent.

Several factors may explain the variations in the individual segments' shares of the oil and gas industry's total economic contribution. These include, but are not limited to, the reliance of each segment on labor versus capital in the production process, pay scales, and the value added by their activities to the supply chain.

The market segment, which focuses on retail and distribution, is relatively more labor-intensive due to the demands of customer service, logistics, and sales. Consequently, this segment accounts for a larger share of employment (53 percent) and labor income (57 percent). In contrast, downstream production activities, such as refining and petrochemical manufacturing, are more capital-intensive. These activities rely heavily on specialized industrial machinery and advanced technology rather than labor, which is reflected in their lower share of employment contribution (18 percent) but the highest share of output contribution (43 percent).

Additionally, while upstream operations are vital for resource extraction and initial processing, much of the raw material's value is realized during later stages of refining, transformation, and distribution. As a result, the upstream segment's value-added contribution to the supply chain is relatively low (9 percent) compared to its share of employment contribution (16 percent). In contrast, the midstream and downstream segments contribute more significantly to value added (25 percent and 26 percent, respectively) as they involve transforming raw materials into finished products and facilitating their transportation to the market. ❖

4 Economic Contribution by Sub-Region and County

For purposes of exposition, California is divided into four sub-regions, which are shown in **Exhibit 4-1** and defined below.

Southern California
This sub-region includes the following six counties: Imperial, Los Angeles, Orange, Riverside, San Bernardino and San Diego.

San Francisco Bay Area
This sub-region includes the following nine counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma.

Central Coast
This sub-region includes the following four counties: Monterey, San Luis Obispo, Santa Barbara and Ventura.

San Joaquin Valley
This sub-region includes the following eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare.

The oil and gas industry is widespread across the state. However, concentrations of activity are evident.

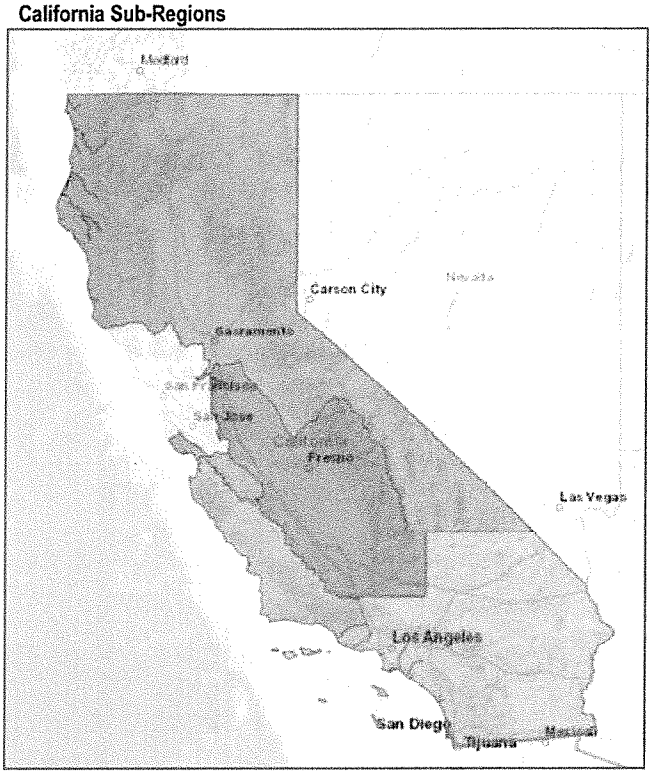
These four sub-regions account for 27 counties and about 88 percent of the direct employment in the industry. The remaining 31 counties are summarized in a Rest of State sub-region.

According to the Division of Oil, Gas and Geothermal Resources of the California Department of Conservation (DOGGR), well activity is similarly distributed among the sub-regions.

Active wells are distributed across the state, but the majority of them, nearly 80 percent, are located in Kern County in the San Joaquin Valley sub-region.[24] The distribution of active wells by county is shown in **Exhibit 4-2.**

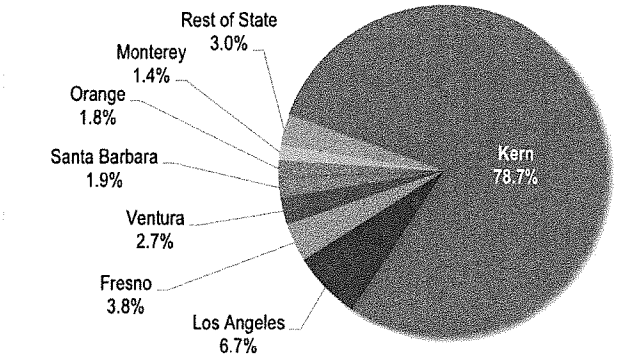
Direct activity and economic and fiscal contributions of each sub-region are presented in the following pages. ❖

Exhibit 4-1
California Sub-Regions



Source: ESRI

Exhibit 4-2
Active Wells in CA by County 2021



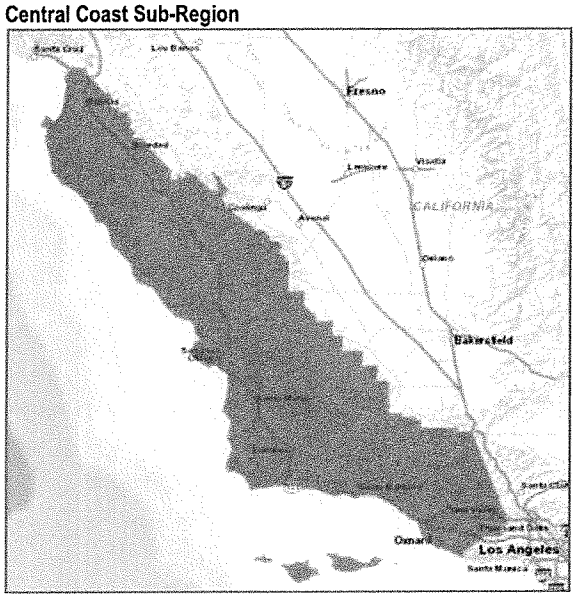
Source: CA Dept of Conservation, DOGGR

[24] CA Dept of Conservation. 2021 Annual Oil and Gas Report. https://www.conservation.ca.gov/calgem/pubs_stats/annual_reports/Pages/annual_reports.aspx.

Central Coast Sub-Region

The Central Coast sub-region consists of the four counties of Monterey, San Luis Obispo, Santa Barbara and Ventura.

Exhibit 4-17
Central Coast Sub-Region



Source: ESRI

Exhibit 4-18
Direct Employment of Oil and Gas Industry – Central Coast Sub-Region 2022*

		Employment
Upstream		**2,020**
211	Oil and gas extraction	1,090
213111	Drilling oil and gas wells	200
213112	Support activities for oil and gas operations	570
333132	Oil and gas field machinery and eqpmt mfg.	160
Midstream		**690**
23712	Oil and gas pipeline construction	180
4247	Petroleum and petroleum prods wholesalers	450
486	Pipeline transportation	60
Downstream		**130**
32411	Petroleum refineries	110
324191	Petroleum lubricating oil and grease mfg.	20
32511	Petrochemical manufacturing	0
Market		**3,500**
2212	Natural gas distribution	950
4571	Gasoline stations	2,410
45721	Fuel dealers	140
TOTAL DIRECT EMPLOYMENT		**6,330**
Percent of California O&G Industry Employment		*4.3%*

* Includes royalty owners as proprietors

Exhibit 4-19
Backward Linkages: Oil and Gas Industry Total Economic and Fiscal Contribution – Central Coast Sub-Region 2022*

ECONOMIC CONTRIBUTION	Employment	Labor Income ($ millions)	Value Added ($ millions)	Output ($ millions)
Direct	6,330	$957	$4,485	$7,740
Indirect	8,250	648	912	1,597
Induced	6,360	395	708	1,142
TOTAL CONTRIBUTION	**20,940**	**$2,000**	**$6,105**	**$10,478**
Percent of Total CA O&G Industry Contribution	*3.90%*	*3.75%*	*3.68%*	*3.10%*
Percent of Sub-Region Total	*1.71%*	*2.30%*	*4.31%*	*4.52%*

FISCAL CONTRIBUTION	State and Local ($ millions)	Federal ($ millions)	Total ($ millions)
Personal income taxes	80	226	306
Social insurance	8	207	215
Sales and excise taxes	864	36	899
Property taxes	819	0	819
Corporate profits taxes	81	81	161
Special Assessments	27	0	27
Other taxes	120	0	120
Fees, fines and permits	20	40	60
TOTAL TAX REVENUES	**2,018**	**589**	**2,607**

* Includes royalty owners as proprietors

Characteristics of the Industry Workforce in Central Coast

Gender of Workforce

This region has the highest male representation, with 71.3 percent of workers being male and only 28.7 percent female, reflecting a more traditional workforce composition.

Age of Workforce

Workers aged 35–54 make up 45.8 percent of the workforce, while older workers (55 and above) represent 27.3 percent, higher than the statewide average. Younger workers under 25 make up 7.2 percent.

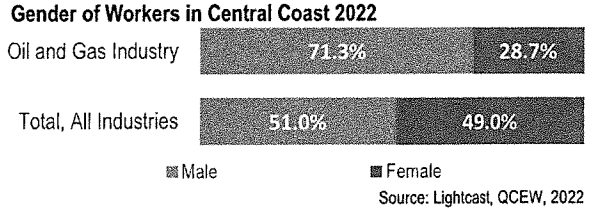
Race and Ethnicity in the Workforce

White workers dominate this region, making up 45 percent of the workforce. Hispanic or Latino workers represent 39.2 percent, while Asians and Blacks account for 8.6 percent and 3.7 percent, respectively.

Educational Attainment of Workers

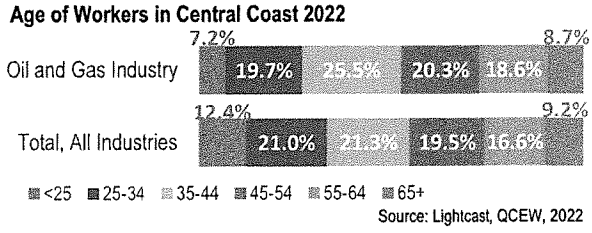
A higher proportion of workers have a high school diploma or less (43.2 percent), with fewer holding a bachelor's degree or higher (19.8 percent) compared to other sub-regions.

Exhibit 4-20
Gender of Workers in Central Coast 2022



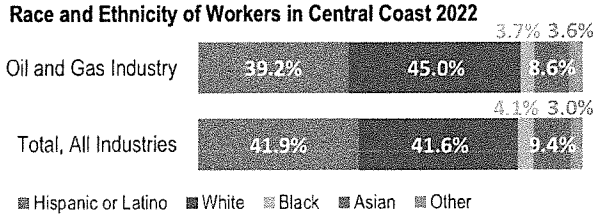
Source: Lightcast, QCEW, 2022

Exhibit 4-21
Age of Workers in Central Coast 2022



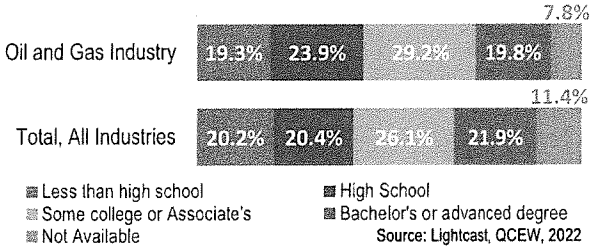
Source: Lightcast, QCEW, 2022

Exhibit 4-22
Race and Ethnicity of Workers in Central Coast 2022



Source: Lightcast, QCEW, 2022

Exhibit 4-23
Educational Attainment of Workers in Central Coast 2022



Source: Lightcast, QCEW, 2022

California's Oil and Gas Industry by County

California is comprised of 58 individual counties. Oil and gas industry activity varies from county to county. This section identifies the direct activity of the oil and gas industry in each county and then estimates the industry's total economic and fiscal contribution.

State-level and sub-regional and county-level impacts were estimated separately. This analysis used individual county data for estimation of sub-regional and county-level contributions of the oil and gas industry, using the economic contribution analysis approach based on output numbers estimated for oil and gas related industries.

Additional details on the methodology used in this report can be found in the Appendix.

Exhibit 4-38 identifies the direct industry employment, the total economic contribution and the total fiscal contribution of each county. Detailed results for each county are presented in Section 7, in alphabetical order. ❖

Exhibit 4-38
Backward Linkages: Oil and Gas Industry
Total Economic and Fiscal Contribution by County*
California 2022

County	Direct Employment	Total Economic Contribution*			Total Fiscal Contribution	
		Total Employment	Total Labor Income ($ millions)	Total Value Added ($ millions)	State and Local ($ millions)	Federal ($ millions)
Alameda County	5,008	17,214	2,010.1	4,857.3	1,068.4	491.5
Alpine County	1	2	0.0	0.2	0.1	0.0
Amador County	124	226	11.9	25.0	7.4	2.6
Butte County	482	1,113	79.9	322.4	197.3	29.1
Calaveras County	295	687	41.2	234.7	148.7	19.6
Colusa County	279	469	38.0	182.1	100.1	16.6
Contra Costa County	11,318	50,555	6,424.1	25,444.3	5,140.6	2,259.1
Del Norte County	116	171	8.1	24.0	6.4	2.3
El Dorado County	552	1,606	101.7	363.4	204.9	30.9
Fresno County	4,649	16,881	1,600.7	4,986.5	1,613.7	534.7
Glenn County	249	485	37.2	205.8	123.7	19.7
Humboldt County	645	1,468	108.9	437.7	240.9	43.5
Imperial County	712	1,323	84.9	546.7	394.5	47.2
Inyo County	144	289	21.7	143.2	106.8	12.5
Kern County	13,418	35,216	3,214.8	10,054.5	2,426.2	1,064.6
Kings County	570	1,092	73.5	369.4	207.5	29.2
Lake County	537	1,103	75.6	302.4	134.6	27.2
Lassen County	92	140	5.1	14.7	5.3	1.3
Los Angeles County	33,196	151,490	15,117.7	47,139.5	10,176.8	4,608.0
Madera County	816	1,779	155.6	619.9	290.9	54.3
Marin County	838	2,742	327.2	701.4	167.6	73.3
Mariposa County	75	172	10.8	23.2	7.1	2.9

Exhibit 4-38 (cont'd)

County	Direct Employment	Total Economic Contribution* Total Employment	Total Labor Income ($ millions)	Total Value Added ($ millions)	Total Fiscal Contribution State and Local ($ millions)	Federal ($ millions)
Mendocino County	554	1,309	110.4	543.7	309.3	49.1
Merced County	995	2,097	124.8	513.1	304.4	46.6
Modoc County	57	96	5.7	63.6	50.7	6.3
Mono County	100	167	11.5	30.5	6.8	3.2
Monterey County	1,060	2,753	253.7	964.4	458.2	86.6
Napa County	707	2,309	177.5	402.9	122.3	45.5
Nevada County	549	1,742	102.8	470.6	292.6	41.9
Orange County	9,895	44,639	4,924.6	11,620.7	4,262.9	1,323.2
Placer County	2,839	10,674	1,105.8	3,219.1	1,021.5	313.8
Plumas County	105	203	9.8	45.6	29.6	3.9
Riverside County	6,654	21,218	1,374.0	3,745.2	1,506.5	385.9
Sacramento County	5,074	17,209	1,560.7	5,105.6	2,099.8	472.4
San Benito County	122	251	19.7	51.2	19.8	5.5
San Bernardino County	7,553	20,428	1,450.9	4,649.2	2,014.5	443.1
San Diego County	13,139	50,080	5,163.3	13,518.7	3,422.5	1,481.7
San Francisco County	737	3,544	604.2	1,046.7	96.5	105.8
San Joaquin County	2,165	7,393	566.9	2,432.3	1,428.7	222.1
San Luis Obispo County	1,318	4,729	424.7	1,443.5	540.7	134.4
San Mateo County	1,190	2,819	357.8	711.5	126.6	71.2
Santa Barbara County	1,402	5,061	518.6	1,270.3	331.2	133.6
Santa Clara County	3,363	9,017	1,283.4	3,619.2	1,345.3	317.8
Santa Cruz County	619	1,569	145.7	415.5	181.6	41.5
Shasta County	1,095	2,793	179.4	835.4	474.1	77.7
Sierra County	17	23	0.8	2.3	0.9	0.2
Siskiyou County	262	419	20.3	113.2	78.6	9.3
Solano County	2,520	7,602	720.0	2,926.4	503.3	248.3
Sonoma County	1,119	3,234	262.5	984.8	554.3	85.6
Stanislaus County	1,901	5,517	421.3	1,889.2	1,030.8	176.3
Sutter County	297	808	55.7	279.8	183.1	22.9
Tehama County	430	865	58.9	225.1	108.0	21.0
Trinity County	67	98	3.5	9.7	3.9	1.0
Tulare County	1,665	4,164	299.7	1,267.1	705.5	121.8
Tuolumne County	291	559	36.3	160.9	76.3	11.9
Ventura County	2,544	10,760	1,011.3	2,738.6	729.4	289.5
Yolo County	1,333	3,771	401.2	1,588.1	704.7	132.8
Yuba County	297	624	49.3	145.9	45.8	11.7
Total	148,150	536,770	53,365.5	166,047.7	47,940.2	16,315.5

* Estimates may differ from reports whose methodology includes royalty owners as proprietors.

Source: Estimates by LAEDC

7 Backward and Forward Linkages in California by County

Alameda County

Exhibit 7-1
Direct Activity of Oil and Gas Industry
Alameda County 2022

Industry Group	Employment	Labor Income ($ millions)
Upstream	282	2.0
Mid-stream	379	56.7
Downstream	104	17.3
Market	4,243	801.0
Total Direct Activity	**5,008**	**876.9**

Source: IMPLAN; Estimates by LAEDC

Exhibit 7-2
Economic Base in Alameda County
(Employment by Industry)

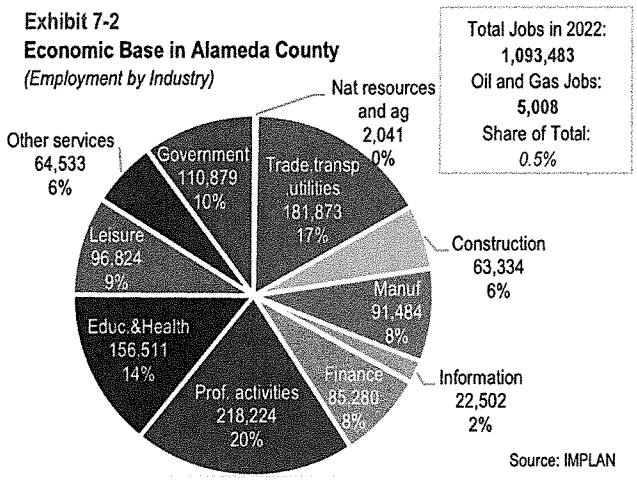


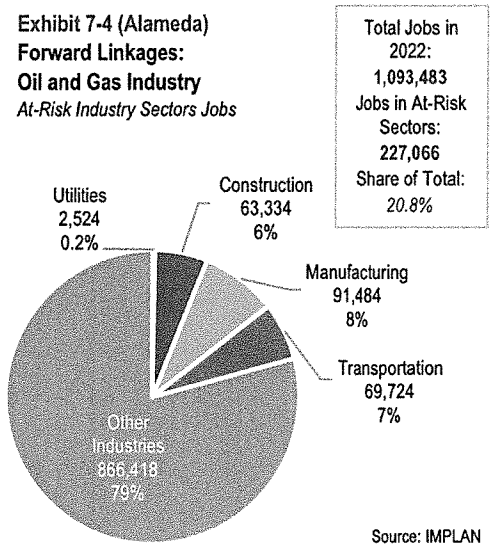
Exhibit 7-3
Backward Linkages: Oil and Gas Industry
Total Economic and Fiscal Contribution
Alameda County 2022

ECONOMIC CONTRIBUTION	Employment	Labor Income ($ millions)	Value Added ($ millions)	Output ($ millions)
Direct	5,008	876.9	3,105.4	5,571.5
Indirect	7,061	721.8	1,028.9	1,619.6
Induced	5,145	411.4	723.1	1,111.9
TOTAL CONTRIBUTION	**17,214**	**2,010.1**	**4,857.3**	**8,303.1**
Percent of County Total	*1.6%*	*1.8%*	*2.8%*	*2.9%*
Percent of Total CA Contribution	*3.2%*	*3.8%*	*2.9%*	*2.5%*

FISCAL CONTRIBUTION	State and Local ($ millions)	Federal ($ millions)
Personal income taxes	68.7	195.7
Social insurance	9.1	191.1
Sales and excise taxes	357.6	13.7
Property taxes	411.3	0.0
Corporate profits taxes	79.4	79.4
Special Assessments	10.7	0.0
Other taxes	126.6	0.0
Fees, fines and permits	11.9	15.2
TOTAL TAX REVENUES	**1,075.3**	**495.2**

* May not sum due to rounding
Source: Estimates by LAEDC

Exhibit 7-4 (Alameda)
Forward Linkages:
Oil and Gas Industry
At-Risk Industry Sectors Jobs



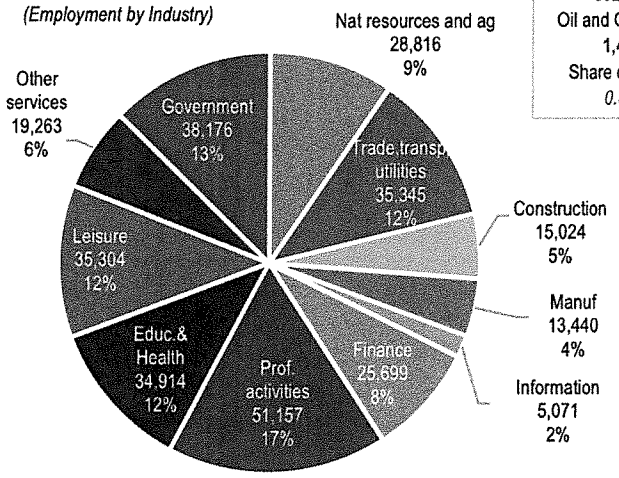
Santa Barbara County

Exhibit 7-165
Direct Activity of Oil and Gas Industry
Santa Barbara County 2022

Industry Group	Employment	Labor Income ($ millions)
Upstream	524	78.5
Midstream	176	17.3
Downstream	7	0.1
Market	695	114.6
Total Direct Activity	**1,402**	**210.5**

Source: IMPLAN; Estimates by LAEDC

Exhibit 7-166
Economic Base in Santa Barbara County
(Employment by Industry)



Total Jobs in 2022: 302,210
Oil and Gas Jobs: 1,402
Share of Total: *0.5%*

Source: IMPLAN

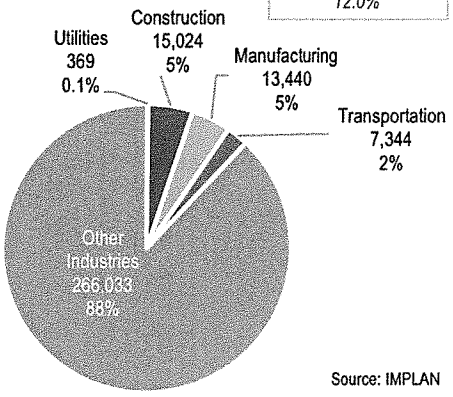
Exhibit 7-167
Backward Linkages: Oil and Gas Industry
Total Economic and Fiscal Contribution
Santa Barbara County 2022

ECONOMIC CONTRIBUTION	Employment	Labor Income ($ millions)	Value Added ($ millions)	Output ($ millions)
Direct	1,402	210.5	810.9	1,345.2
Indirect	2,024	194.9	262.5	435.2
Induced	1,635	113.3	196.9	317.0
TOTAL CONTRIBUTION	**5,061**	**518.6**	**1,270.3**	**2,097.4**
Percent of County Total	*1.7%*	*2.3%*	*3.6%*	*3.6%*
Percent of Total CA Contribution	*0.9%*	*1.0%*	*0.8%*	*0.6%*

FISCAL CONTRIBUTION	State and Local ($ millions)	Federal ($ millions)
Personal income taxes	$21.5	$60.5
Social insurance	2.2	50.8
Sales and excise taxes	135.3	4.6
Property taxes	132.0	0.0
Corporate profits taxes	14.4	14.4
Special Assessments	3.7	0.0
Other taxes	19.4	0.0
Fees, fines and permits	3.5	5.1
TOTAL TAX REVENUES	**$331.9**	**$135.4**

* May not sum due to rounding
Source: Estimates by LAEDC

Exhibit 7-168 (Santa Barbara)
Forward Linkages:
Oil and Gas Industry
At-Risk Industry Sectors Jobs



Total Jobs in 2022: 302,210
Jobs in At-Risk Sectors: 36,177
Share of Total: *12.0%*

Source: IMPLAN

Sheila de la Guerra

From: Wickersham, Matt <Matt.Wickersham@alston.com>
Sent: Monday, May 12, 2025 4:31 PM
To: sbcob
Cc: Amjad, Robia
Subject: RE: Public comment re 5/13/25 BOS Agenda Item No. 8
Attachments: Part 2 of 2 - SPR - Santa Barbara BOS - 5-13-25 Item No. 8 Cmt Ltr - Attachment D - J.pdf

Importance: High

Part 2 of 2

From: Wickersham, Matt
Sent: Monday, May 12, 2025 4:23 PM
To: sbcob@countyofsb.org
Cc: Amjad, Robia <Robia.Amjad@alston.com>
Subject: Public comment re 5/13/25 BOS Agenda Item No. 8
Importance: High

Part 1 of 2

Attached please find a comment letter submitted on behalf of Sentinel Peak Resources California LLC. Please confirm that you received the attachment. Thanks

Matt Wickersham
Partner
ALSTON & BIRD LLP
350 S. Grand Ave, 51st Fl.
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+1 213 576 1185 (O)
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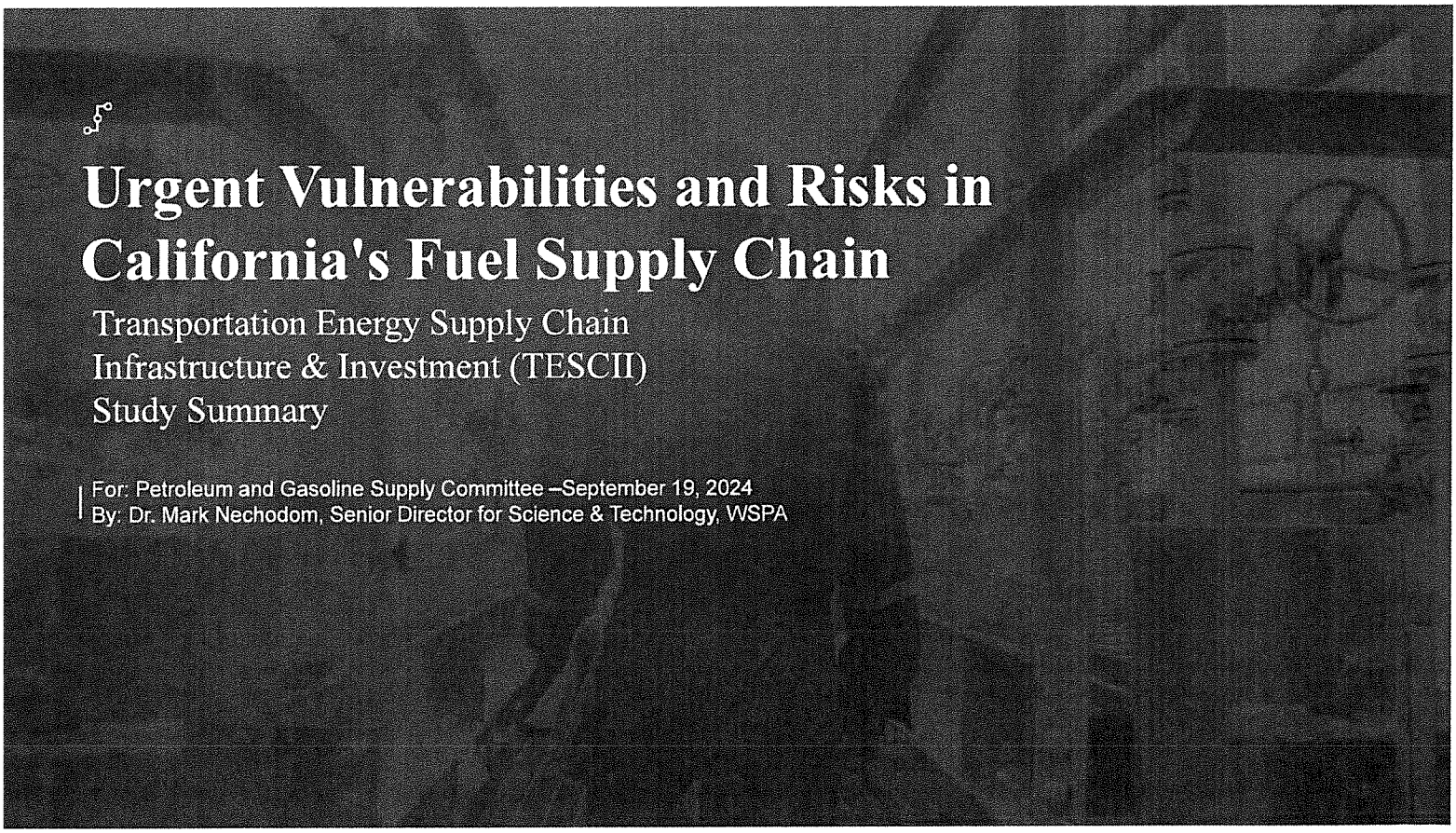
Matt.Wickersham@alston.com

ATTACHMENT D

[Alston & Bird's Comment Letter re May 13, 2025, Board Hearing re Item No. 8]



Urgent Vulnerabilities and Risks in California's Fuel Supply Chain

Transportation Energy Supply Chain Infrastructure & Investment (TESCII) Study Summary

For: Petroleum and Gasoline Supply Committee –September 19, 2024

By: Dr. Mark Nechodom, Senior Director for Science & Technology, WSPA

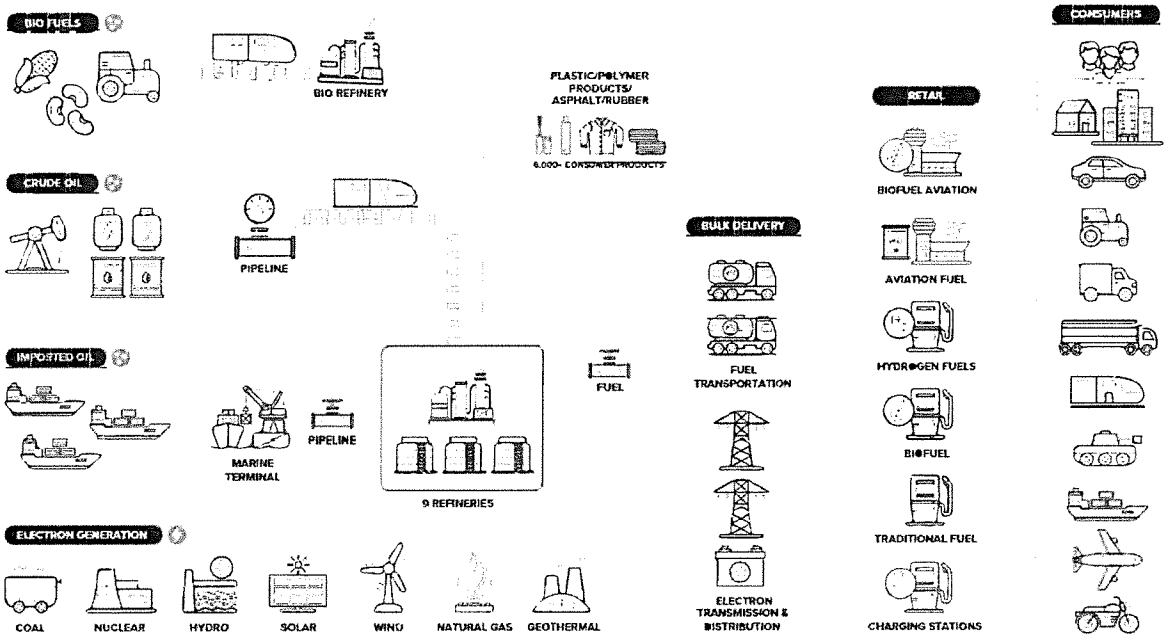
Transportation Energy System

SCAN TO LEARN MORE

MOLECULE ELECTRON

SUPPLY

DEMAND



WSPA

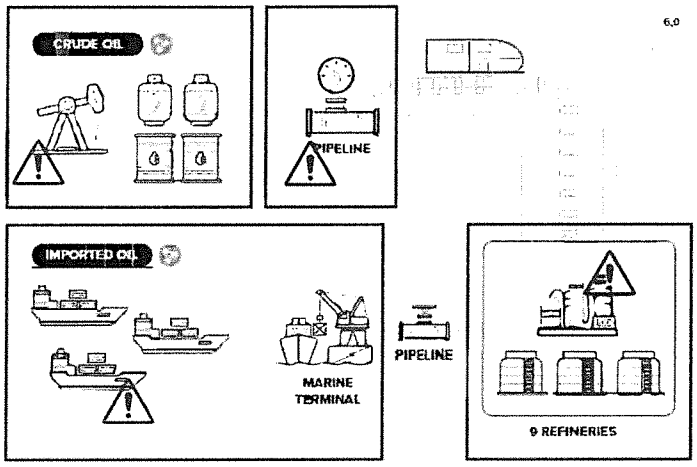
Background & Approach

- California's transportation fuel supply chain is at risk of unprecedented disruption, primarily due to the culmination of tightening state policies and regulations. To better understand the complete impact, WSPA enlisted Turner, Mason & Company (TM&C) to carry out the Transportation Energy Supply Chain Infrastructure and Investment (TESCII) study.

- TM&C conducted a study of the California transportation fuel system (upstream, downstream, logistics, refining, regulatory) with a focus on identifying potential "pinch-points" that could significantly impact the ability of the system to meet the state's future transportation fuel demands.

Concerns & Urgent Takeaways

- California crude oil production is in terminal decline, despite ample reserves.
- Pipelines are increasingly at risk of shutdown.
- Marine facilities face increased congestion and dramatic vessel limits.
- It's not a matter of "if" but "when" refiners and oil producers will face tough decisions.
- Without major investments, refiners' ability to adapt to shifts in supply or demand will be constrained.

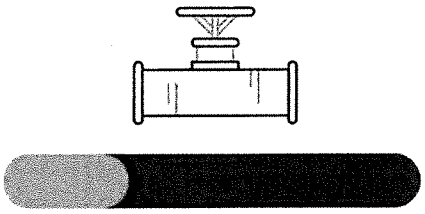


Production of Crude Oil is in Terminal Decline

- California's crude oil production is experiencing a sharp annual decline rate of ~15%, which is about 50% faster than gasoline demand declines in the state's Transportation Fuels Assessment "Rapid" case.
- This rapid decline is driven by the lack of drilling permits, NOT lack of resources.
- Setback law (SB 1137) could result in a ~20% decrease of production per year.

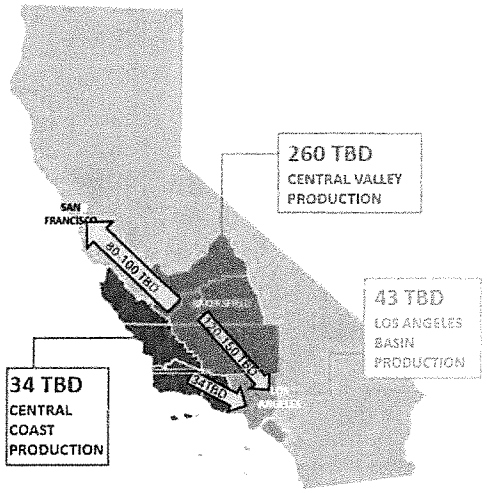
Pipelines Are Approaching Minimum Volume

- California crude oil pipelines are nearing critical minimum throughput levels, requiring at least 30% capacity to maintain safe flow.
- In all scenarios, it's assumed that once a pipeline shuts down, it will not return to service.
- Pipelines serving Northern California are at the greatest risk.
- If pipelines close, refineries become more dependent on waterborne crude oil imports but in some cases lack sufficient marine capacity to fully compensate.



Pipelines Are Approaching Minimum Volume

Regional Movement	Pipeline Name	Current Capacity (TBD)	Estimated Minimum Throughput (TBD)	Current Throughput (TBD)	
Central Valley to San Francisco	KLM Pipeline	90	30-35	80-100	~30%
	San Pablo Bay Pipeline	210	60-65		
Central Valley to Los Angeles	Line 63	60	20-25	120-150	~44%
	Line 2000	110	30-35		
	M-70 Pipeline	110	30-35		
	Chevron	30	10-15		
Central Coast to Los Angeles	Texaco	28	10-15	34	~40%
	Southern California Pipeline System	55	20-25		

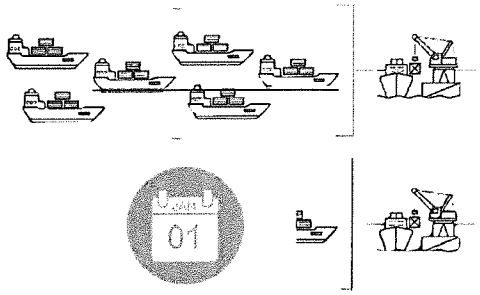


WSPA

Source: CalGEM, CEC, California State Lands Commission, TM&C analysis

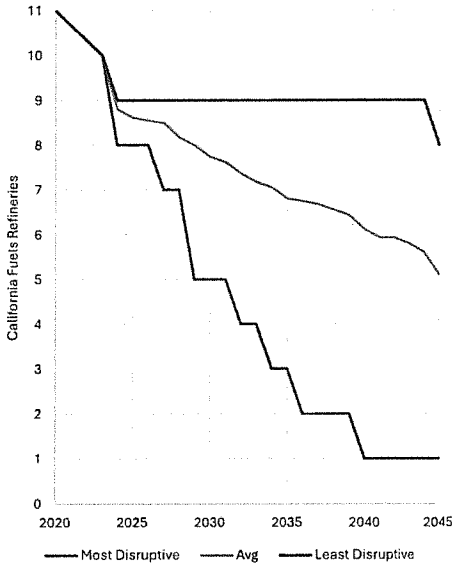
Ports Face Congestion & Vessel Limits

- Starting January 1, 2025, the California Air Resources Board (CARB) will implement "At-Berth" regulations that require ocean-going tanker vessels in Southern California ports to cut emissions using shore power or CARB-approved technologies:
  - The California tanker fleet, as a whole, is NOT currently equipped to use shore power;
  - Sufficient infrastructure is NOT in place to supply the needed electricity;
  - Stack emissions control systems are still in the testing phase, and likely a long way from full deployment at scale.
- Economic decisions may lead to a significant decline in supply of crude and other transportation fuel products needed to meet the state's energy demand.



Refinery Shutdowns Loom in All Scenarios

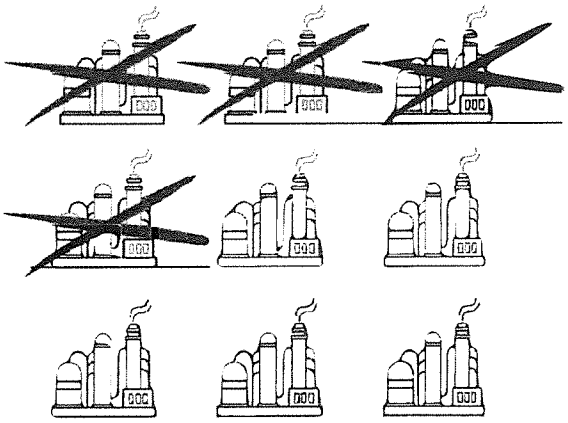
- TM&C evaluated potential refinery closures across 16 scenarios covering combinations of:
  - Transportation fuel demand cases
  - Crude oil production profiles
  - Logistics constraints
  - Refining operating environments
- In all scenarios, up to half of California's fuel refineries could shut down by 2045. In the worst-case scenario, only one refinery may be left by 2040.
- "At-Berth" restrictions could quickly shutdown 3-4 refineries.
- None of these scenarios take into account the proposed gasoline margin cap penalty.



Note: Refinery utilization falls to 65% before shut-down

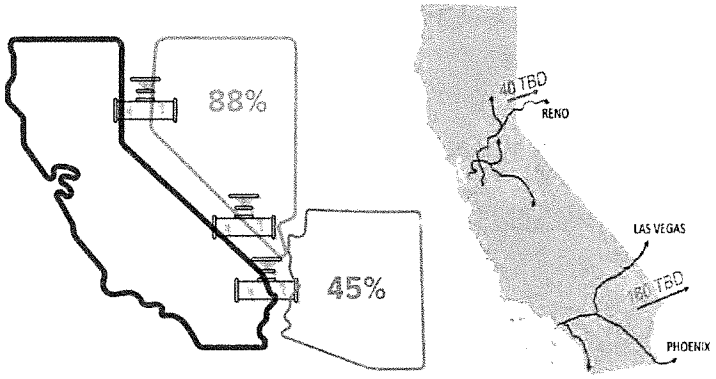
Refinery Shutdowns Loom in All Scenarios

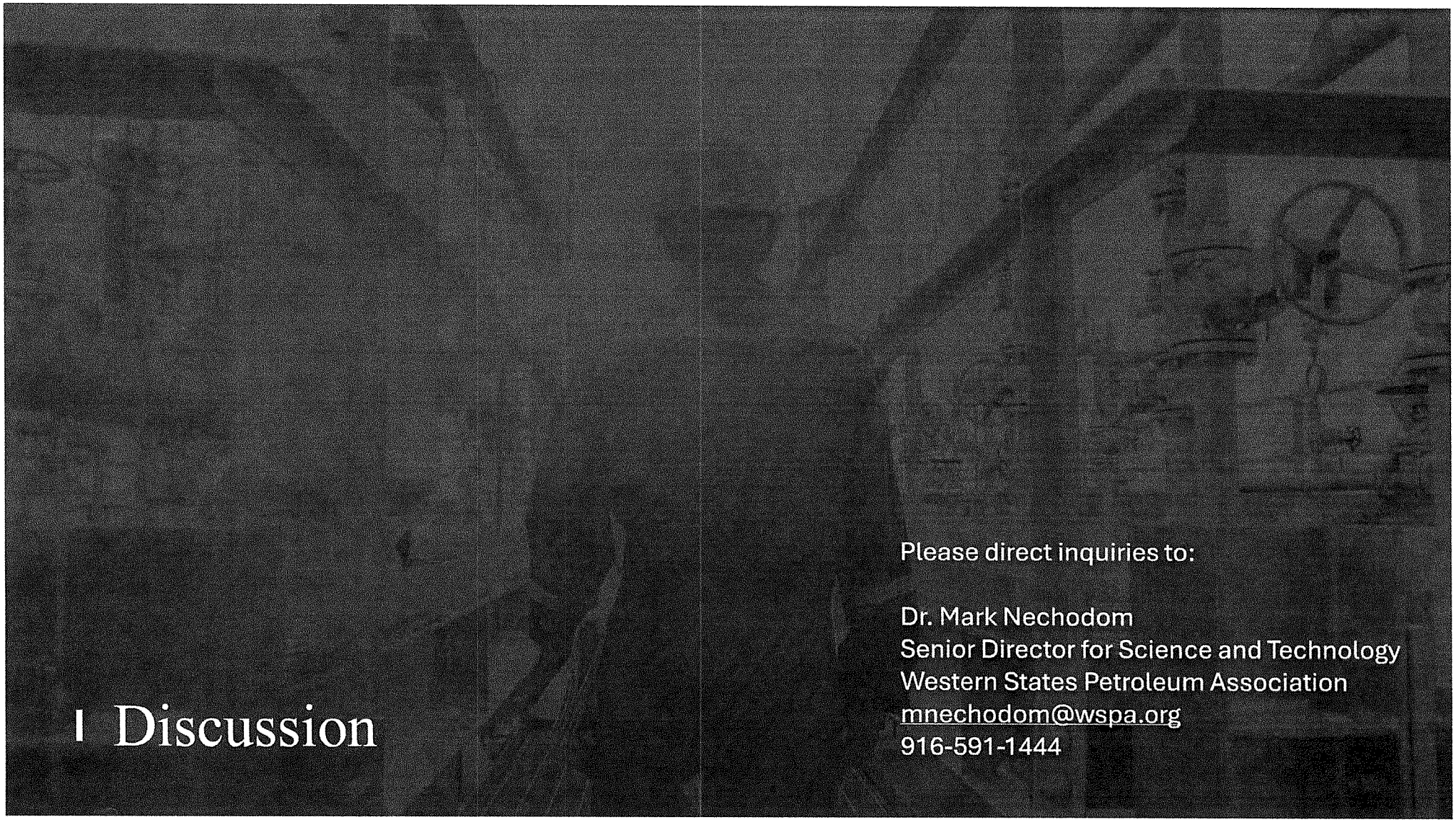
- If onshore power is unavailable or on-ship capture is infeasible, full enforcement of "At-Berth" restrictions could close 3-4 refineries almost immediately
- Refineries may close faster than demand declines, which could put pressure on marine logistics and vessel traffic limits.
- Reality usually strikes faster and harder than models.



Arizona and Nevada Depend on California

- California refineries supply 45% of Arizona's and 88% of Nevada's transportation fuels, so any disruption in California impacts all three states.
- California's northern and southern fuel supply systems are not connected, requiring ocean-going vessels to transport fuel between them.





Discussion

Please direct inquiries to:

Dr. Mark Nechodom
Senior Director for Science and Technology
Western States Petroleum Association
mnechodom@wspa.org
916-591-1444

ATTACHMENT E

scale), EIR Sections 10.12.3 and 11.12.3 for a description of the affected environment for greenhouse gas emissions (as applicable at either a study region or field-specific scale), and EIR Section 10.12.4 for details regarding the impact methodology and significance criteria that have been used.

12.2.12.2 Programmatic Level Analysis of the Project

Impact GHG-1 Generate greenhouse gas emissions that may have a significant impact on the environment

This alternative would restrict future oil and gas activity by halting well stimulation activities in areas under State jurisdiction. This would avoid GHG emissions that occur in areas under State jurisdiction as a result of oil and natural gas production made possible by well stimulation, and it would also lead to a decrease in California oil production. Therefore, there would be no direct impacts (Class IV). But there are greater indirect impacts from increased oil and gas imports that cause significant and unavoidable GHG emissions from out-of-state oil and gas producers (Class I). There are also indirect impacts associated with additional conventional wells and abandonment activities, or stimulation activities on lands under federal or tribal jurisdiction, to make up for lost production.

Under this alternative, an additional 57 million barrels of crude per year would need to be supplied from fields outside of California (EIR Section 8.3.1), which currently supply about 380 million barrels annually (ARB, 2014c). Oil and natural gas producers outside of California would need to increase production in response, and this would increase GHG emissions from the oil and gas industry outside of California.

Sources of GHG at oil and gas fields outside of California are not subject to California's regulatory setting (EIR Section 10.12.2), which ensures that GHG sources in the business of oil and gas production in California are subject to multiple programs aimed at reducing GHG. Emissions of GHG that occur at a point of oil and gas extraction outside of California are not subject to the Cap-and-Trade Program, and by increasing the activity of oil and gas extraction outside of California, this alternative would cause increased GHG from sources that are not required to offset the GHG to comply with California's cap, resulting in an overall net increase in GHG emissions compared with both existing conditions and the project. Although the oil and gas extraction and associated GHG emissions would occur outside California, California would continue to experience the adverse environmental effects of global climate change driven by GHG emissions worldwide. This impact would occur from GHG sources that are not covered by California's regulatory setting and outside of the potential control of DOGGR to feasibly mitigate. As a result of increasing GHG emissions from sources beyond California's control, no feasible mitigation would be available. This alternative would increase GHG emissions from sources that could not be prevented, reduced, offset, or otherwise mitigated by DOGGR or another California agency tasked with reducing GHG emissions. The GHG emissions increase would cause a potentially significant impact on the environment, and because these emissions would occur beyond California's control, Impact GHG-1 would be Class I: Significant and Unavoidable.

Some of the mitigation measures developed in this EIR, though usually written for implementation by DOGGR through the issuance of well stimulation treatment permits, provide guidance that other agencies could follow in fashioning their own mitigation strategies for relevant project approvals coming under their jurisdiction. DOGGR's relevant model mitigation measures in this context include the following:

MM AQ-2b **Reduce Emissions from Portable Equipment and Mobile Sources.** (Full text in EIR Section 10.3.5.)

MM GHG-1a **Prevent Methane Emissions from Associated Gas and Casinghead Gas.** (Full text in EIR Section 10.12.5.)

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

Because this alternative would cause some future oil and gas production to be lost, California end users of oil and gas would need to rely on a replacement supply. Using a replacement crude supply could result in an incremental change in life-cycle GHG emissions of California's crude supply, which could be an increase or decrease depending the carbon intensity of the replacement supply. The carbon intensity for production and transport of an average unit of crude oil used in California (about 11.4 g CO2e/MJ) is lower than that of an average crude produced in California (12.9 g CO2e/MJ) (ARB, 2012). Life-cycle GHG from the production and transport of 57 million barrels of crude at the average carbon intensity for crude produced in California are around 4,600,000 MTCO2e, and depending on the field-specific factors of the replacement supply imported, life-cycle GHG for the same amount of average supply used in California is around 4,100,000 MTCO2e. Although this implies that replacing in-state production with average imports could incrementally reduce life-cycle GHG emissions, all crude produced for use in California is subject to the LCFS, regardless of the location of the supply.

Despite the greater average carbon intensity of crude oil produced in California compared with oil produced in places that would export their oil to California, an increase in imports into California would still result in an overall net increase in GHG emissions compared with both existing conditions and the project. This is ~~alternative could conflict with California's existing programs to reduce GHG~~ because in-state production is not only subject to the LCFS but also subject to the Cap-and-Trade Program. These programs require oil and gas production to operate within an overall statewide cap, which is lowered over time. The Cap-and-Trade Program limits in-state GHG emissions to ensure that the AB 32 goals will be achieved and the statewide emission target of 431 MMTCO2e by 2020 will not be exceeded (ARB, 2007; ARB, 2014b). Producers of the replacement supply of oil and gas under this alternative if outside of California would not be subject to California's statewide GHG cap. Out-of-state oil and gas producers create GHG emissions during extraction that are uncovered and not limited by the Cap-and-Trade Program. These emissions will not be captured by California's cap, but would be in addition to it. As a result, in addition to total statewide emissions of 431 MMTCO2e by 2020 allowed by the Cap-and-Trade Program, this alternative would also increase GHG from out-of-state crude oil recovery and transport activities by around 4.1 MMTCO2e, depending on the replacement supply. The ARB is directed to take steps to "minimize leakage" in implementing AB 32 regulations [HSC Section 38562(b)(8))], and this alternative would conflict with that requirement by potentially offsetting an in-state reduction of GHG emissions with an increase in GHG emissions outside the state. By increasing these uncovered emissions at sources that are beyond the control of California's regulations and any recommended mitigation, this alternative would conflict with California's programs aimed at reducing GHG, and Impact GHG-2 would be would be Class I: Significant and Unavoidable.

There are potentially feasible and effective strategies for mitigating, at least to some degree, the adverse indirect effects of Alternative 1, though these strategies would in most instances have to imposed or implemented by agencies other than DOGGR, as most of the effects would be caused by activities beyond DOGGR's control. Even so, some of the mitigation measures developed in this EIR, though usually written for implementation by DOGGR through the issuance of well stimulation treatment permits, provide guidance that other agencies could follow in fashioning their own mitigation strategies for relevant project approvals coming under their jurisdiction. DOGGR's relevant model mitigation measures in this context include the following:

12.2.16.2 Programmatic Level Analysis of the Project

Alternative 1 would prohibit all future well stimulation activities in areas under State jurisdiction, as described in EIR Chapter 7 (Description of the Project). Therefore, there would be no disruptions to existing and permitted land uses from well stimulation activities in those areas. But there are indirect impacts associated with additional conventional wells, or increased stimulation activities on lands under federal or tribal jurisdiction; also, indirect impacts of well abandonment may free up areas of existing oil and gas wells for other uses. Prohibiting well stimulation in areas under State jurisdiction would require importing oil from other sources to meet demand, thus increasing ship, rail, and tanker truck traffic to the State from the foreign and domestic suppliers. It is assumed that imports would be transported by way of existing transportation routes and no new rail lines or roads would be required, except locally at any new or expanded terminals that might be developed to handle the imports.

This alternative would require new legislation to revise or repeal PRC Sections 3106(b) and 3160(b), which currently authorize well stimulation treatments. The new legislation would need to specify that all current or future well stimulation treatments are not allowable in areas under State jurisdiction.

Impact LU-1	**Preclude existing or permitted land uses, or create a disturbance that would diminish the function of land uses**

Implementation of Alternative 1 would prohibit all current and future well stimulation activities in areas under State jurisdiction, which would decrease the amount of oil and gas produced in California as compared to allowing well stimulation in those areas. Under this alternative there would be no direct activities associated with well stimulation and thus no related disruptions that would preclude or diminish an existing or permitted land use or diminish the function of land uses. No impacts would occur (Class IV).

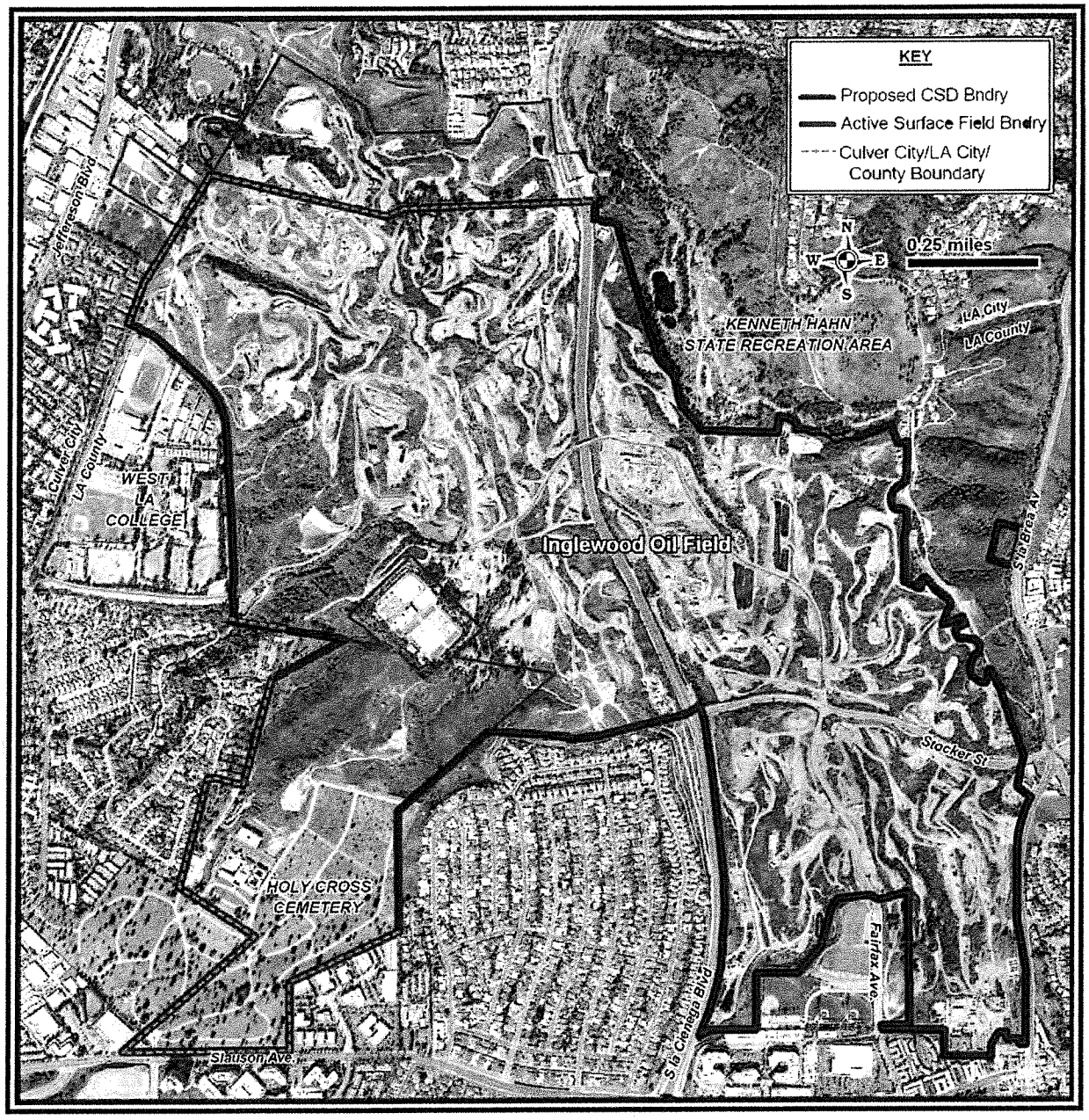
However, this alternative could both decrease activity at some existing fields through the abandonment of oil and gas fields that become unproductive, or increase the intensity of activities an existing oil and gas field where additional conventional wells are developed and/or enhanced recovery methods are employed or their use increased, or if stimulation activities increase on lands under federal or tribal jurisdiction. Because these activities are within existing fields, they would have less than significant impacts (Class III) on surrounding land uses. Prohibiting well stimulation would cause an increase in activities associated with the importation of oil and gas products into the State. Increased importation would be along existing transportation routes; with regard to land uses, this would be primarily rail and highway routes. The volume of traffic passing any point along a route may be substantially greater than current conditions, but this would depend on the volume of the imports. Absent detailed information on specific routes and nearby land uses, it is not feasible to determine the degree of impact. In some situations the volume of traffic on the route could disrupt traffic and site access (e.g., at rail crossings) or create increased noise, air quality emissions, and other conditions that could diminish a land use's function. In this situations theses impacts would be significant and unavoidable and their effect on land use and planning would significant and unavoidable (Class I).

Therefore, under Alternative 1, for Impact LU-1, direct impacts would be avoided at potential well stimulation locations by prohibiting the practice in areas under State jurisdiction (Class IV). Impacts resulting from the prohibition could be less than significant (Class III) at existing fields where increased levels of conventional drilling and enhanced recovery occur, or where stimulation activities are increased on lands under federal or tribal jurisdiction. Along transportation corridors impacts could be significant and unavoidable (Class I) at some locations, depending on the volume of imports and the nature and location of land uses near the transportation corridor.

ATTACHMENT F

Final Environmental Impact Report

Baldwin Hills Community Standards District



October 2008

SCH# 2007061133
County Project # R2007-00570
Environmental Case # RENVT2007-00048

Prepared By:
mrs
Marine Research Specialists

Prepared For:
Los Angeles County
Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Very little, if any, crude oil is exported from California. Since the beginning of 2001 through the end of November 2007, 1,367,000 barrels of crude has been exported from PADD 5 (California, Arizona, Nevada, Oregon, Washington, Alaska, and Hawaii). The majority of the exports were a shipment to China of 805,000 barrels in April 2004, 401,000 barrels to Canada in January 2006, and 57,000 barrels to Canada in October 2004 (EIA 2008). The remaining exports from PADD 5 (17 shipments) were to Canada and Mexico, and averaged approximately 6,000 barrels per shipment. Given the small size of most of these shipments, it is likely they were via truck and not marine tanker.

Therefore, if one assumes that all of the PADD 5 exports originated from California, which is highly unlikely, but the most conservative assumption, then at best there would have been two to four marine tanker trips for exporting crude over a seven year period. This compares with over 1,000 tanker trips that imported crude oil into California over the same seven year period.

Refining of crude oil into end-use products such as gasoline, diesel and jet fuel requires energy. Refinery energy requirements are a function of the refinery arrangements, the type of crude oil, the type of gasoline being produced (winter or summer blends), the level of sulfur removal required, etc. Efficiencies of refineries have been shown to range from 83 to 87% (GM, 2001), meaning that 13 to 17% of the product energy content is required to refine the product.

4.2.7.2 Affected Environment

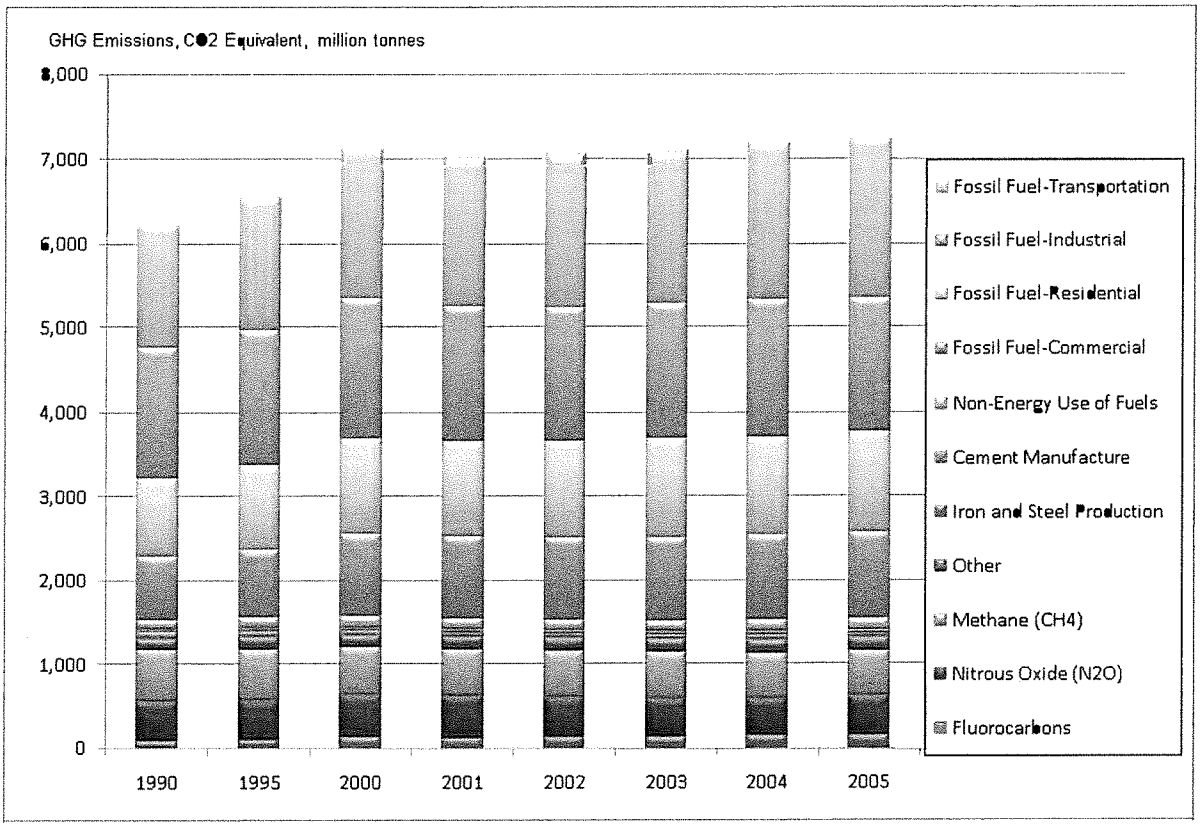
National Greenhouse Gas Emissions

Fossil fuel combustion represents the vast majority of the nation's greenhouse gas emissions, with CO_2 being the primary greenhouse gas. The total U.S. greenhouse gas emissions were 7,260 million metric tons of carbon equivalents (MMTCE) in 2005, of which 84% was CO_2 emissions (EPA 2007). Figure 4.2-7 shows the breakdown of U.S. greenhouse gas emissions since 1990. Approximately 33% of greenhouse gas emissions were associated with transportation in 2005 and about 41% was associated with electricity generation.

Statewide Greenhouse Gas Emissions

California's greenhouse gas emissions are large in a world-scale context and growing over time. If California were considered an independent country, its emissions would rank at least 16th largest. In 2004, California produced 492 million metric tons of CO2 equivalent greenhouse gas emissions (CEC 2006). The transportation sector is the single largest category of California's greenhouse gas emissions, producing 41% of the state's total greenhouse gas emissions in 2004. Electrical generation produced 22% of greenhouse gas emissions. Most of California's emissions, 81%, are carbon dioxide produced from fossil fuel combustion (CEC 2006).

Figure 4.2-7 U.S. Greenhouse Gas Emissions



Notes: Fossil fuel use includes electrical generation, Source: EPA 2007.

Local Greenhouse Gas Emissions Related to Current Site Uses

Existing greenhouse gas emissions related to the current facilities use include both direct and indirect emissions. Direct emissions, meaning those produced at the facility site, include the emissions from the combustion of natural gas or diesel fuel and fugitive emissions from valves and connections, which include methane as a component. Indirect emissions include the emissions from vehicles (both gasoline and diesel) delivering materials and equipment to the site and emissions related to the use of electricity which is generated at some other location.

An estimate of greenhouse gas emissions related to the current site use was prepared and is summarized in Table 4.2.14. Emissions estimates are based on fuel use for engines, flares, boiler and vehicles, and from the methane fractions of the gas contributing to the fugitive emissions.

Greenhouse gas emissions rates from electrical generation, due to the wide variability in electricity sources and between seasons and times of day, used the California ISO rate discussed above. The greenhouse gas emissions on a CO_2 equivalent basis, including the GWR factors for methane, are shown in Table 4.2.14 below.

Table 4.2.14 Current Greenhouse Gases Emissions Summary

Emission Source	Annual Emissions (tons/yr)		
	CH_4	CO_2	Percent of Greenhouse Gas
Operational Direct Emissions			
Internal Combustion	0.50	10,052	12.4
Tank Fugitive Emissions	0.00	0.00	0.0
Other Fugitive Emissions	35.5	5.51	0.0
Well Heads Fugitive Emissions	0.09	0.04	0.0
Miscellaneous Sources	0.00	0.00	0.0
Well Workover Emissions	0.00	157	0.2
Drilling Emissions (including offsite)	0.00	4,184	5.1
Total Operational Direct Emissions	36.0	14,398	17.7
Operational Indirect Emissions	=	=	
Workers and Trucks	0.00	3,676	4.5
Electrical Generation	0.00	63,190	77.8
Total Operational Indirect Emissions	0.00	66,866	82.3
Total Operational Baseline Greenhouse Gases Emissions	**36.0**	**81,264**	
Total Operational Baseline GHG CO2 equivalent, tons	**82,021**		

Notes: Electrical generation assumes Cal ISO weighted average GHG emission rate. To convert to metric tonnes of GHG, multiply by 0.90.

4.2.7.3 GHG Regulatory Setting

International Regulations

Kyoto Protocol

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5% from 1990 levels during the first commitment period of 2008–2012. Notably, while the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

Climate Change Technology Program

The United States has opted for a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol's mandatory framework. The Climate Change Technology Program is a multi-agency research and development coordination effort (which is led by the Secretaries of Energy and Commerce) that is charged with carrying out the President's National Climate Change Technology Initiative.

ATTACHMENT G

Office of the Los Angeles City Attorney
Hydee Feldstein Soto

REPORT NO. R25-0221
MAY 05 2025

REPORT RE:

DRAFT ORDINANCE RESCINDING ORDINANCE NO. 187,709 WHICH PROHIBITED NEW OIL AND GAS EXTRACTION AND MADE EXISTING EXTRACTION ACTIVITIES A NONCONFORMING USE IN ALL ZONES

The Honorable City Council
of the City of Los Angeles
Room 395, City Hall
200 North Spring Street
Los Angeles, California 90012

Council File No. 17-0447-S2

Honorable Members:

This Office has prepared and now transmits for your consideration the enclosed draft ordinance, approved as to form and legality. This draft ordinance rescinds Ordinance No. 187,709 (Ordinance) pursuant to a stipulated judgment and writ of mandate in *Warren E&P, Inc. v. City of Los Angeles*, Los Angeles Superior Court Case No. 23STCP00060, and the three related cases. The Superior Court found the Ordinance and associated implementation memoranda were preempted under state law (Council File No. 24-1466). The stipulated judgment, previously approved by the City Council (Council), preserves the City's right to adopt future oil regulations as discussed below.

Background and Summary of Ordinance

On December 2, 2022, Council adopted Ordinance No. 187,709, amending Sections 12.03, 12.20, 12.23, 12.24, and 13.01 of the Los Angeles Municipal Code (LAMC) to prohibit new oil and gas extraction and make existing extraction activities a

nonconforming use in all zones. (Council File No. 17-0447-S2; Planning Case Nos. CPC-2022-4864-CA; ENV-2022-4865-MND.) The Ordinance also provided that no new wells could be drilled, or existing wells redrilled, deepened, or maintained, unless findings could be made for an exemption showing that the work was needed to prevent or respond to a threat to public health, safety, or the environment, as determined by the Zoning Administrator (ZA).

To implement the Ordinance, the Department of City Planning's Office of Zoning Administration (OZA) issued Zoning Administrator Memorandum No. 141 (ZA Memo), which set forth the procedure for applying for a Health & Safety Exemption under the Ordinance, and a Zoning Administrator Interpretation (ZAI) defining "well maintenance" (No. ZA-2022-8997-ZAI).

Lawsuit and Stipulated Judgment

The Ordinance was challenged by oil operators in four related lawsuits, with the lead case being *Warren E&P, Inc. v. City of Los Angeles*, LASC Case No. 23STCP00060.[1]

On September 6, 2024, Los Angeles Superior Court Judge Curtis Kin found that the Ordinance, ZAI, and ZA Memo were preempted by state law. This ruling invalidated the Ordinance and rendered it unenforceable.

Approximately three weeks later on September 25, 2024, the Governor signed Assembly Bill (AB) 3233 (2024 Reg. Sess.), which added Section 3106.1 to the Public Resources Code to provide local governments with authority to regulate oil and gas operations, notwithstanding other state law.

Following the Court's ruling, and the adoption of AB 3233, the parties engaged in settlement discussions. On January 15, 2025, Council authorized this Office to enter into a stipulation and stipulated judgment that: (1) grants injunctive and declaratory relief, expressly declaring that the Ordinance, ZAI, and ZA Memo are preempted by state law, and are "void and invalidated"; and (2) requires the City to rescind the Ordinance, ZAI, and ZA Memo. (Council File No. 24-1466, City Attorney Report No. R24-0590.) The stipulated judgment preserves the City's right to adopt future oil ordinances or regulations in light of AB 3233.

The Mayor approved this stipulation on January 28, 2025. The parties filed the stipulation and stipulated judgment with the Court on March 3 and 4, 2025. The Court

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[1] The other three related lawsuits are: *E & B Natural Resources v. City of Los Angeles*, LASC Case No. 23STCP00070, *Native Oil Producers & Employees of California /Western States Petroleum Association v. City of Los Angeles*, LASC Case No. 23STCP00085; and *National Association of Royalty Owners-California, Inc. v. City of Los Angeles*, LASC Case No. 23STCP00106.

entered the judgment on March 21, 2025.

In order to comply with the requirements of the stipulation and stipulated judgment, Council must rescind Ordinance No. 187,709. In addition, the OZA should separately rescind the ZA Memo and ZAI. Upon Council's rescission of the Ordinance, any language in the LAMC that was deleted or amended by the Ordinance will become void, and the former language in Sections 12.03, 12.10, 12.23, 12.24, and 13.01 of Chapter 1 of the LAMC, as they existed prior to the adoption of the Ordinance, will become effective and enforceable.

Recommendation

This Office recommends Council adopt the attached draft ordinance in order to comply with the terms of the stipulation and stipulated judgment.

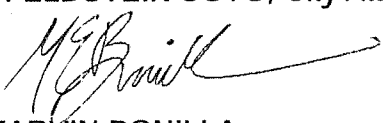
Council Rule 38 Referral

Copies of the draft ordinance are being sent, pursuant to Council Rule 38, to the Department of Building and Safety, the Office of Petroleum and Natural Gas Administration and Safety, the Los Angeles Fire Department, the City Administrative Officer, the Economic and Workforce Development Department, the Director of Finance, the Department of Water and Power, the Port of Los Angeles, the Department of Recreation and Parks, and the Department of City Planning, with a request that all comments, if any, be presented directly to Council when this matter is considered.

If you have any questions regarding this matter, please contact Deputy City Attorney Marvin Bonilla at (213) 574-6467. A member of this Office will also be present when you consider this matter to answer questions you may have.

Sincerely,

HYDEE FELDSTEIN SOTO, City Attorney

By 

MARVIN BONILLA
Deputy City Attorney

JWH:MB:lr
Enclosure

m:\real prop_env_land use\land use\jennifer tobkin\oil litigation\council reports\r25-0221 report to council (oil ordinance rescission) (final) revised.docx

ATTACHMENT H

LANNING

AMY J. BODEK, AICP
Director,
Regional Planning

DENNIS SLAVIN
Chief Deputy Director,
Regional Planning

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND PUBLIC SCOPING MEETING

DATE: March 27, 2025

TO: State Clearinghouse, Registrar-Recorder/County Clerk, Responsible Agencies, Trustee Agencies, Organizations and Interested Parties

SUBJECT: Notice of Preparation of an Environmental Impact Report in Compliance with Title 14, section 15082(a) of the California Code of Regulations

The County of Los Angeles ("County") is the lead agency pursuant to the California Environmental Quality Act ("CEQA") and intends to prepare an Environmental Impact Report ("EIR") for the proposed project identified below. The County has prepared this Notice of Preparation ("NOP") to provide Responsible Agencies and other interested parties with information describing the project and to identify its potential environmental effects pursuant to State requirements.

AGENCIES: The County requests your agency's input on the scope and content of the environmental information relevant to your agency's statutory responsibilities in connection with the proposed project, in accordance with Title 14, section 15082(b) of the California Code of Regulations. Your agency will need to use the EIR prepared by the County when considering any permits that your agency must issue, or other approval for the project.

ORGANIZATIONS AND INTERESTED PARTIES: The County requests your comments and concerns regarding the environmental issues associated with construction and operation of the proposed project.

PROJECT & PERMIT(S): Revised Oil Well Ordinance (ROWO), Project No. PRJ2025-000212, Ordinance RPPL2025000276, General Plan Amendment RPPL2025000277, Environmental Plan RPPL2025000284

PROJECT APPLICANT: County of Los Angeles Department of Regional Planning

PROJECT LOCATION: Unincorporated Los Angeles County (Countywide)

PROJECT DESCRIPTION: The project includes: i) Amendments to Title 22 – Planning & Zoning of the Los Angeles County Code to prohibit new oil wells and production facilities, designate existing oil wells and production facilities as nonconforming due to use, and modify standards for oil wells during the amortization period; ii) Amendments to the Baldwin Hills Community Standards District (CSD) to be consistent with countywide prohibition of oil wells and production facilities and standards for oil wells during the amortization period; iii) Amendments to Title 12 – Environmental Protection of the Los Angeles County Code to remove noise exemptions for oil wells; and iv) Amendments to the County of Los Angeles General Plan in support of sustainability and environmental justice goals by phasing out oil production in unincorporated Los Angeles County.

i. Amendments to Title 22 – Planning & Zoning: Under the proposed project, no new oil wells or production facilities may be established in any zone. Pursuant to Section 22.172 of the County Code (Nonconforming Uses, Buildings, and Structures), existing, legally established oil wells or production facilities operating without an approved Conditional Use Permit or other discretionary permit will be considered nonconforming and subject to a 20-year amortization period. In addition, the ordinance establishes performance standards addressing signage, comment and complaint logging, site maintenance, bonding, well plugging, and site abandonment and restoration. This ordinance would apply to all oil wells in unincorporated Los Angeles County, except in the Coastal Zone.

ii. Amendments to the Baldwin Hills CSD: The project amends the Baldwin Hills CSD to align with and implement the provisions of the Title 22 amendments described above, ensuring consistent application of the new regulations and standards within the Baldwin Hills CSD.

iii. Amendments to Title 12 – Environmental Protection: The project eliminates the current exemption for oil and gas wells from the Noise Control regulations set forth in Title 12 of the County Code. Consequently, these wells will be subject to all provisions of the Noise Control chapter, ensuring better management of noise impacts related to oil and gas extraction activities.

iv. Amendments to the General Plan: The project amends the General Plan. Specifically, it revises the Land Use Element, Conservation and Natural Resources Element, and Safety Element to prohibit new oil well operations and remove designations that support oil production activities.

POTENTIAL ENVIRONMENTAL EFFECTS OF THE PROJECT: Based on a preliminary review of the proposed project consistent with section 15060 of the CEQA Guidelines, the County has determined that an EIR should be prepared for this proposed project. In addition, consistent with section 15082 of the CEQA Guidelines, the County has identified the following probable environmental effects of the project, which will be addressed in the EIR for this project:

- Mineral Resources

The County has determined that there is not a likelihood of potentially significant effects related to the following environmental topics:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Services Systems
- Wildfire
- Mandatory Findings of Significance

The County proposes that the EIR indicate the reasons why these effects were determined not to be significant and are therefore not addressed in detail in the EIR.

NOTICE OF SCOPING MEETING: The County will conduct a virtual public scoping meeting for the purpose of soliciting oral and written comments from interested parties as to the appropriate scope and content of the EIR.

All interested parties are invited to attend the meeting to assist in identifying issues to be addressed in the EIR. The meeting will include a brief presentation of the project to be addressed in the EIR and will provide attendees with an opportunity to provide input to the scope of the EIR. The meeting will be held online.

Thursday, April, 17, 2025
6:00 PM–7:00 PM (Pacific Time)—Via Zoom Meeting
Please use the following link to access the webinar: bit.ly/4hYN0WB

The meeting will include language access service in Spanish, Cantonese, and Mandarin. Translation in other languages can be made available at the meeting upon request. Please submit translation requests at least seven business days in advance of each scheduled meeting to ordinance@planning.lacounty.gov.

PUBLIC REVIEW PERIOD: The County has determined to make this NOP available for public review and comment pursuant to Title 14, Section 15082(b) of the California Code

ATTACHMENT I

RESOLUTION NO. 23-124

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF VENTURA

ADOPTING IMPLEMENTATION CLARIFICATION FOR CERTAIN POLICIES REGARDING OIL AND GAS CONTAINED IN THE 2040 GENERAL PLAN

WHEREAS, on January 9, 2020, the County of Ventura ("County") released a Draft Environmental Impact Report ("DEIR") for the 2040 General Plan Update ("2040 GPU" or "Project") pursuant to the California Environmental Quality Act ("CEQA"). The 2040 GPU is a comprehensive update of the County's General Plan. The 2040 General Plan identifies the goals, policies and implementation programs that will guide future decisions in the County concerning a variety of issues, including land use, climate change, agriculture, transportation, hazards, public facilities, health and safety, environmental justice, economic vitality, and resource conservation through the year 2040;

WHEREAS, on July 16, 2020, the County Planning Commission held a public hearing to consider and make recommendations to the Board of Supervisors on the 2040 GPU. The Planning Commission recommended approval of the Project to the Board of Supervisors ("Board");

WHEREAS, on September 1, 2020, the Board held a public hearing on the Project. Written and oral comments were submitted before and at the hearing by numerous individuals and entities, including the below-stated Petitioners, that, among other things, raised objections to the Final Environmental Impact Report ("FEIR"). The Board continued the public hearing to September 15, 2020;

WHEREAS, on September 15, 2020, the Board adopted Resolution No. 20-106 certifying the FEIR for the 2040 General Plan, repealing the existing general plan except for portions constituting the 2014-2021 Housing Element, and approving and adopting the 2040 General Plan, 2040 General Plan Background Report, and all related documents regarding the 2040 General Plan Project;

WHEREAS, on September 16, 2020, the County filed a Notice of Determination for the Project with the Governor's Office of Planning and Research, pursuant to CEQA;

WHEREAS, in October 2020, parties including Aera Energy LLC, Western States Petroleum Association, Lloyd Properties, Carbon California Operating Company LLC, the National Association of Royalty Owners, Deborah Duggan, Richard Duggan, Theresa Ryan, Julie Monro, Mark Monro, Patricia Cortina and David Cortina ("Petitioners") filed verified petitions for writ of mandate and complaints for declaratory and injunctive relief and seeking damages in the following cases alleging, among other claims, the County's violations of CEQA, the Brown Act, State Planning and Zoning Law, state and federal

preemption, and the unconstitutional taking of private property rights in the approval of the Project (the "Actions"):

- *Western States Petroleum Association v. County of Ventura, et al.*; Ventura County Superior Court Case No. 56-2020-00546193-CU-WM-VTA
- *Carbon California Company, LLC, and Carbon California Operating Company, LLC v. County of Ventura, et al.;* Ventura County Superior Court Case No. 56-2020-00546198-CU-WM-VTA
- *Aera Energy LLC v. County of Ventura, et al.*; Ventura County Superior Court Case No. 56-2020-00546180-CU-WM-VTA
- *California Resources Corporation v. County of Ventura, et al.;* Ventura County Superior Court Case No. 56-2020-00546189-CUWM-VTA
- *Lloyd Properties v. County of Ventura, et al.;* Ventura County Superior Court Case No. 56-2020-00546196-CU-WM-VTA
- *National Association of Royalty Owners-California, et al. v. County of Ventura;* Ventura County Superior Court Case No. 56-2021-00550558-CU-WM-VTA

WHEREAS, County disputes the allegations made in the Actions;

WHEREAS, to better understand their differences regarding the 2040 GPU and attempt to resolve the Actions, County and Petitioners engaged in settlement discussions;

WHEREAS, during these settlement discussions, County and Petitioners agreed that certain 2040 GPU policies should be clarified by providing further explanation to address Petitioners' concerns and to ensure that they are applied and implemented by the County in a manner that is consistent with the Board's original intent in approving the policies and the FEIR's analysis of the policies as approved, and so that the policies are consistently applied to all land use applicants;

WHEREAS, County and Petitioners further agreed that the Board's adoption of this resolution setting forth the County's clarification of said policies would be the most effective means of addressing Petitioners' concerns and ensuring the policies' accurate application and consistent implementation in accordance with the Board's original intent and as the policies were analyzed in the FEIR;

WHEREAS, the adoption of this resolution does not change or amend the language or meaning of the 2040 GPU as approved and analyzed in the FEIR, and any change to the language of the 2040 GPU policies would require an amendment to the County's General Plan in accordance with state law;

WHEREAS, the adoption of this resolution does not preclude the County from adopting, amending or removing any 2040 GPU policy or program, including those addressed herein, in accordance with applicable law.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby adopts the following clarifications of the 2040 GPU policies set forth below:

Section 1.

A. 2040 GPU Policy:

COS-7.4 Electrically-Powered Equipment for Oil and Gas Exploration and Production

The County shall require discretionary development for oil and gas exploration and production to use electrically-powered equipment from 100 percent renewable sources and cogeneration, where feasible, to reduce air pollution and greenhouse gas emissions from internal combustion engines and equipment.

B. County Clarification:

As used in the policy, "where feasible" applies to the policy as a whole.

Section 2.

A. 2040 GPU Policies:

COS-7.2 Oil Well Distance Criteria
The County shall require new discretionary oil wells to be located a minimum of 1,500 feet from residential dwellings and 2,500 from any school.

COS-7.7 Conveyance for Oil and Produced Water
The County shall require new discretionary oil wells to use pipelines to convey oil and produced water; oil and produced water shall not be trucked.

COS-7.8 Gas Collection, Use, and Disposal
The County shall require that gases emitted from all new discretionary oil and gas wells shall be collected and used or removed for sale or proper disposal. Flaring or venting shall only be allowed in cases of emergency or for testing purposes.

B. County Clarification:

The meaning of the phrases "new discretionary oil wells" and "new discretionary oil and gas wells" (referred to as "new discretionary wells") under Policies COS-7.2, COS-7.7 and COS-7.8 are clarified as follows:

(1) The application of these policies is to be interpreted according to their plain meaning, as applying to new discretionary wells. As specified below, that means the policies apply to development only if (i) that development is a well, (ii) the well is new, and (iii) the new well is subject to a discretionary approval action by the County. This clarification equally applies to Policies COS-7.7 and COS-7.8 if these polices are amended to the form set forth in the FEIR as Mitigation Measures PR-2 and PR-3, respectively.

(i) The policies apply only to wells, and do not apply to ancillary facilities or activities, or to facilities other than wells.

(ii) The policies apply only to new wells. New wells are newly drilled wells separate from any existing well. New wells do not include the modification of permit terms applicable to existing wells. New wells do not include a re-drill or sidetrack of an existing well. New wells do not include downhole activities (including activities generally subject to state jurisdiction by CalGEM) such as tubing changes, pump or other equipment changes, or changes in the status of the existing well. The re-use of an existing but abandoned well using a surface borehole in the same location is not a new well.

(iii) The policies apply to new wells that require a discretionary permit approval from the County. Approvals that are ministerial under the terms of existing permits or under the applicable provisions of the Ventura County Coastal Zoning Ordinance or Non-Coastal Zoning Ordinance, as applicable to the development ("County Zoning Ordinance") are not discretionary approvals.

Section 3.

A. 2040 GPU Policy:

COS-7.2 Oil Well Distance Criteria

The County shall require new discretionary oil wells to be located a minimum of 1,500 feet from residential dwellings and 2,500 from any school.

B. County Clarification:

(1) Based upon the wording of this policy as applying to dwellings and schools, and upon the applicable provisions of the County Zoning Ordinance, this policy shall be applied to residential dwellings based on the distance from the well head to the structure comprising the closest residential dwelling unit.

This policy shall be applied to schools based on the distance from the well head to the closest school facilities.

(2) Thomas Aquinas College is not a "school" for the purpose of this policy, as stated in the FEIR and based on the definition of "school" in the County Zoning Ordinance.

NOW, THEREFORE, BE IT FURTHER RESOLVED that County staff shall interpret and implement the foregoing 2040 GPU policies in accordance with the above-stated clarifications.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Board makes the following findings with respect to the above-stated clarifications:

A. The above-stated clarifications are based on, derive from, and are consistent with the express language of the 2040 GPU policies. The policies and programs in the 2040 GPU are internally consistent. For the same reasons, the above-stated clarifications are consistent with the 2040 GPU as a whole.

B. The above-stated clarifications implement and do not change the text of the applicable 2040 GPU policies. There is therefore no environmental impact that is different from those impacts evaluated in the FEIR for the 2040 GPU. The approval of the above-stated clarifications does not result in any new or increased significant environmental impacts requiring further evaluation or analysis under CEQA. The impacts of the 2040 GPU were fully evaluated in the FEIR and no further CEQA document is required in connection with the adoption of the above-stated clarifications.

On motion of Supervisor Parvin, seconded by Supervisor Long, the Board adopted this resolution on the 12th day of September, 2023.

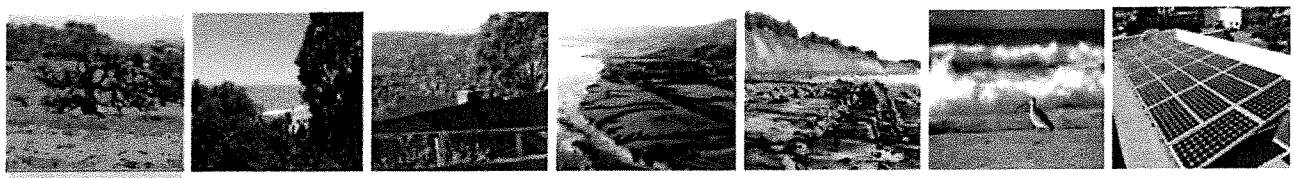
Matt LaVere
Chair, Board of Supervisors
County of Ventura

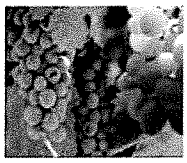
ATTEST:

Dr. Sevet Johnson
Clerk of the Board of Supervisors
County of Ventura, State of California

By: Lori Key
Deputy Clerk of the Board

ATTACHMENT J





SANTA BARBARA COUNTY COMPREHENSIVE PLAN

CONSERVATION ELEMENT

ADOPTED 1979

AMENDED AUGUST 2010

County of Santa Barbara
Planning and Development
123 E. Anapamu Street
Santa Barbara, CA 93101

Other uses of abandoned or depleted mineral resource sites that do not require filling include water-based recreation, and water percolation of groundwater recharge. In the Livermore-Amador Valley east of San Francisco, Kaiser Sand and Gravel Company donated one of its abandoned gravel pits, which had been filled with water, to the East Bay Regional Park District. Opportunities in Santa Barbara County also may exist for innovative rehabilitation and ultimate use plans.

Under current County regulations, an applicant for a conditional use permit for a mineral extraction activity is not required to submit a rehabilitation or ultimate use plan. Experience in other California communities has demonstrated that the benefits of this requirement can be significant and far-reaching. A case by case examination of the existing mineral resource activities in the County might reveal valuable opportunities to coordinate mineral resource extraction with public recreation, flood control, solid waste management, or groundwater recharge programs.

CONCLUSIONS AND RECOMMENDATIONS

Mineral resource extraction in the County makes a relatively important contribution to the local, state, and national economies, and, as such, should be encouraged. At the same time, every effort should be made to minimize direct and indirect adverse environmental impacts, and to achieve and maintain federal and State standards of emissions controls and environmental quality. Much already has been done by the County to achieve these goals, the oil drilling ordinances and the air and water pollution control regulations being prime examples. However, the County and the cities should continue to push for necessary environmental safeguards, as well as to encourage exploration for new resource sites. To meet these general objectives, the County and the cities should adopt the following policies on mineral resource extraction:

- In addition to the relevant policies within this Element, all proposed surface mining operations shall be required to be consistent with the policies contained in the other elements of the Santa Barbara County Comprehensive General Plan, all relevant sections of the Santa Barbara County Code, and all relevant sections of State law.[26]
- Under provisions of the Surface Mining and Reclamation Act of 1975, the County must adopt ordinances to establish procedures for the review of site reclamation plans and issuance of permits to conduct surface mining operations. Within one year after State geologists map areas of mineral deposits, the County must establish resource management policies for incorporation into the Comprehensive Plan. The Board of Supervisors on October 23, 1978, adopted Ordinance No. 3065 (Case No. 77-0A-33), amending Santa Barbara County Zoning Ordinance No. 661 relative to surface mining operations and reclamation plan requirements. The State has not yet mapped County mineral resources.
- The County, in cooperation with responsible federal and State agencies, should undertake a study to evaluate its mineral resources, particularly rock, sand, and gravel, to determine how to protect and exploit them to meet future needs without adverse environmental impacts. The Comprehensive Plan then should be