

PETROLEUM WATCH

CALIFORNIA ENERGY COMMISSION

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REFINERY NEWS

• No Refinery News

CALIFORNIA GASOLINE RETAIL PRICES BY BRAND

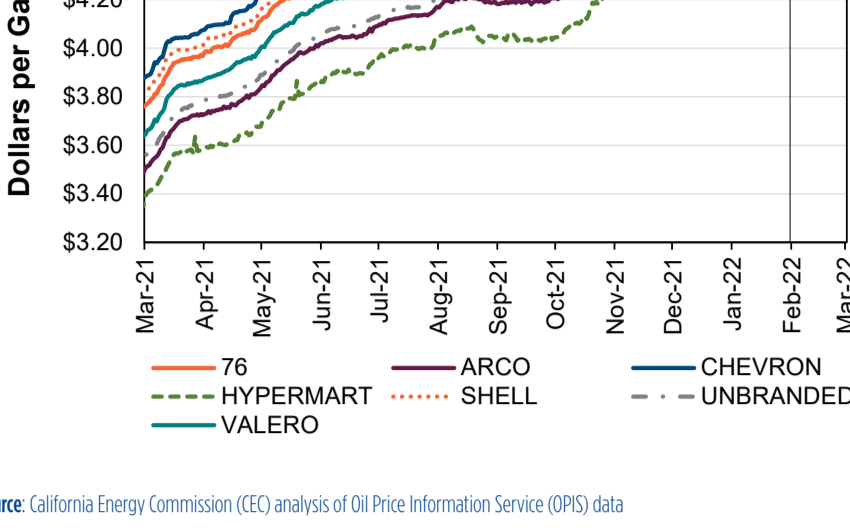
February 2022 vs. 2021

(Percentage Change)

76	34% higher
ARCO	37% higher
Chevron	33% higher
Hypermart	38% higher
Shell	33% higher
Unbranded	45% higher
Valero	35% higher

February 2022 Averages

76	\$4.79
ARCO	\$4.53
Chevron	\$4.93
Hypermart	\$4.37
Shell	\$4.87
Unbranded	\$4.56
Valero	\$4.69



Source: California Energy Commission (CEC) analysis of Oil Price Information Service (OPIS) data

CALIFORNIA DIESEL RETAIL PRICES BY REGION

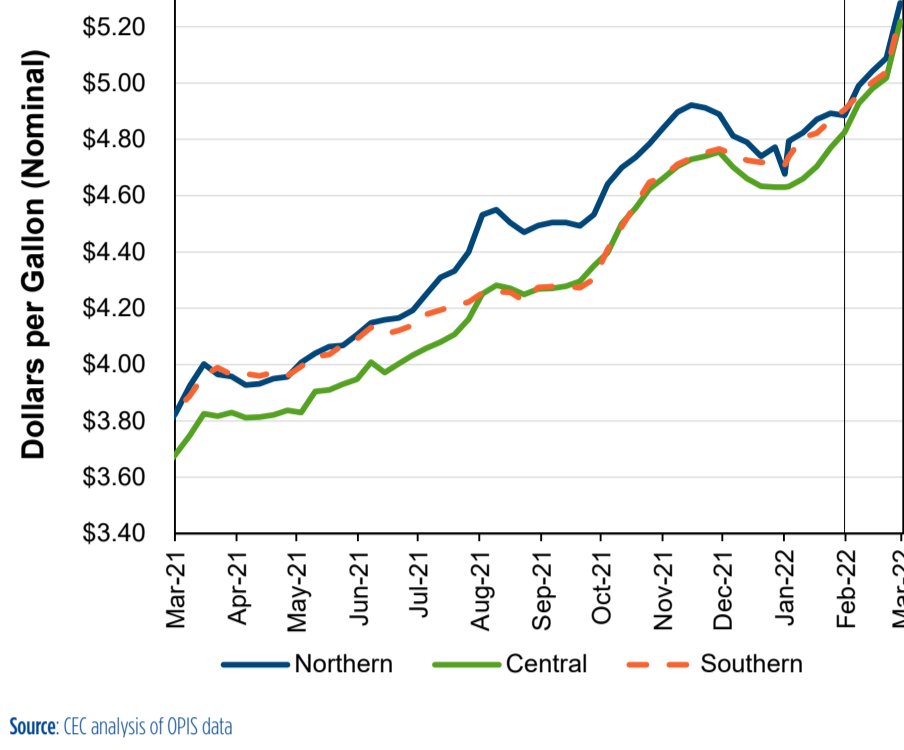
February 2022 vs. 2021

(Percentage Change)

Northern CA	38% higher
Central CA	42% higher
Southern CA	37% higher

February 2022 Averages

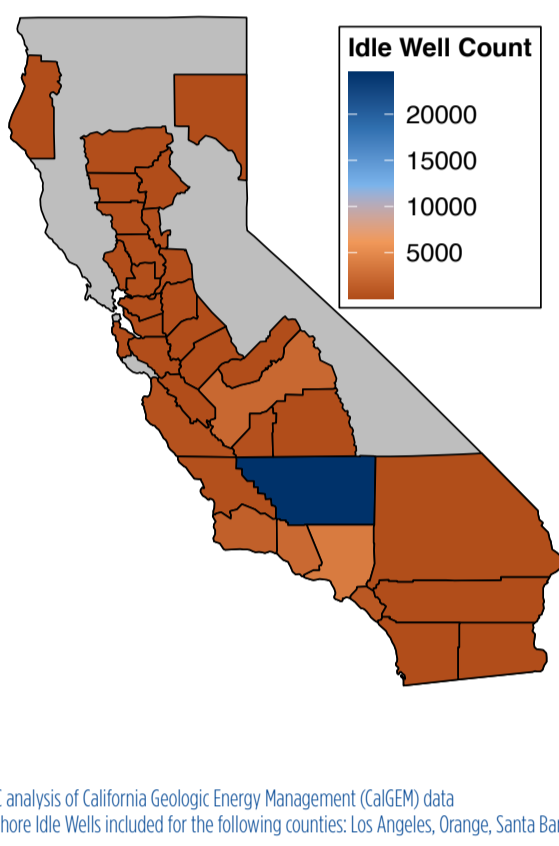
Northern CA	\$5.02
Central CA	\$4.95
Southern CA	\$4.99



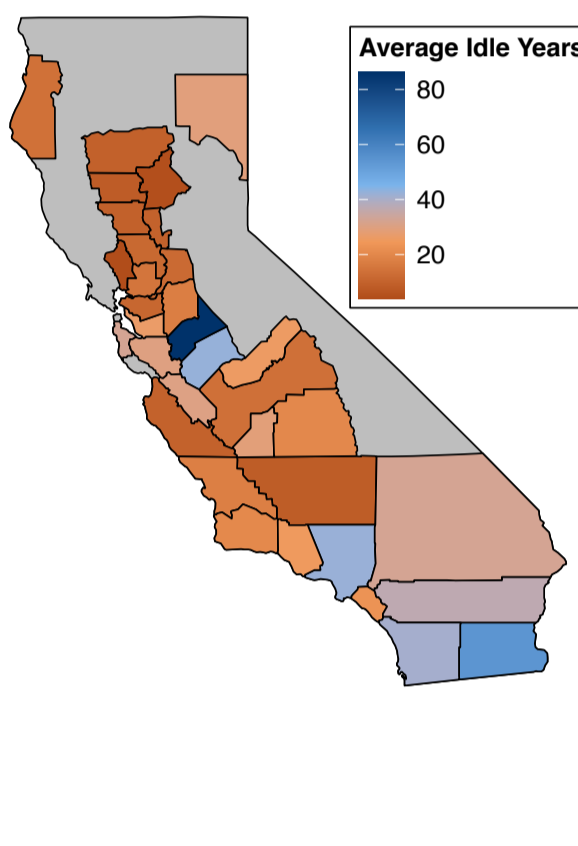
Source: CEC analysis of OPIS data

IDLE WELLS BY COUNTY (2020)

IDLE WELL COUNTS



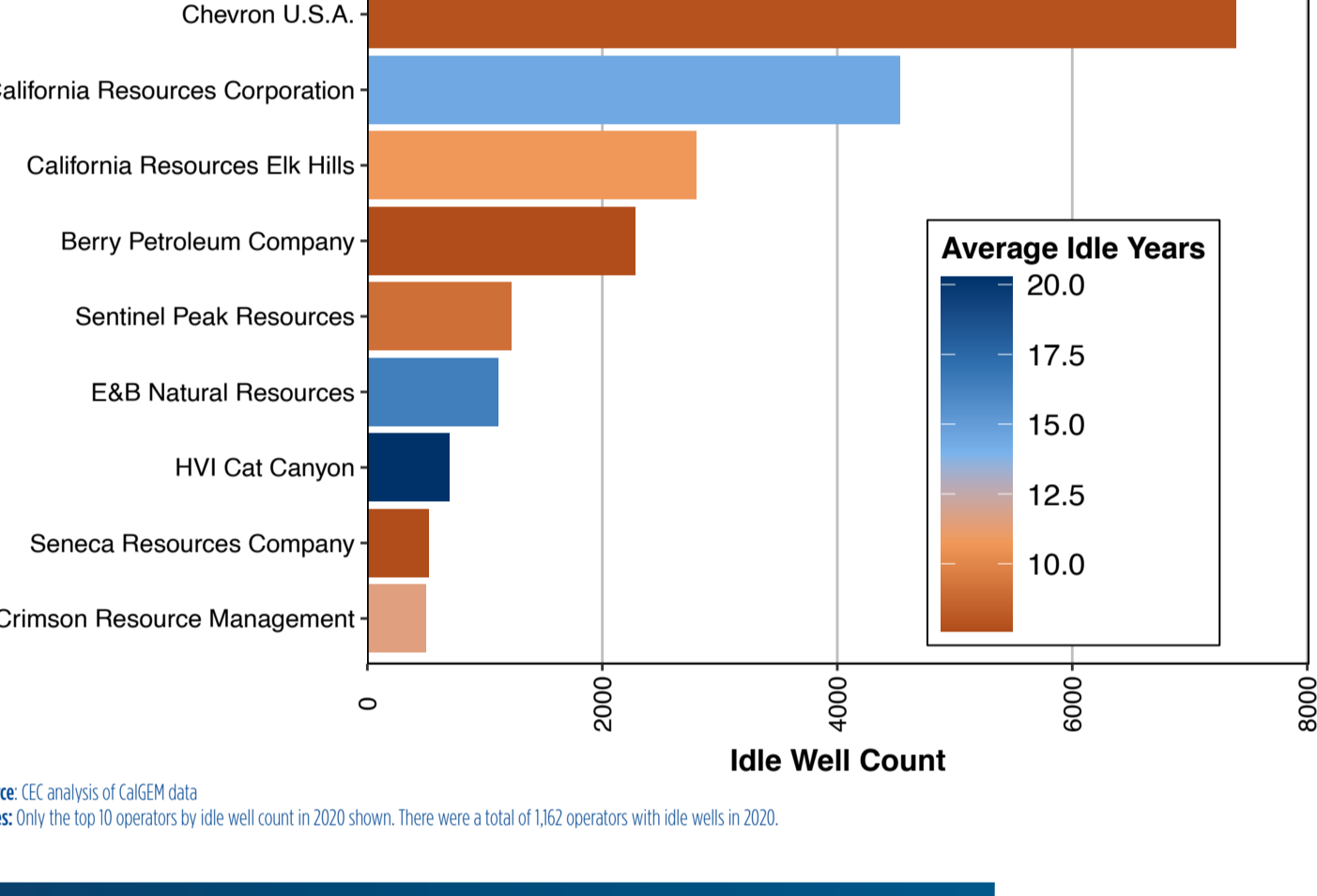
AVERAGE YEARS IDLE



Source: CEC analysis of California Geologic Energy Management (CalGEM) data

Notes: Offshore Idle Wells included for the following counties: Los Angeles, Orange, Santa Barbara, Ventura

IDLE WELL COUNTS BY OPERATOR (2020)

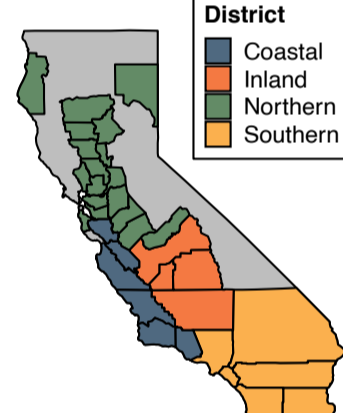


Source: CEC analysis of CalGEM data

Notes: Only the top 10 operators by idle well count in 2020 shown. There were a total of 1,162 operators with idle wells in 2020.

IDLE WELL FEES AND ASSOCIATED COSTS (2020)

District	Total Fees	Average Fee Per Well	Average Cost to Plug Idle Well	Number of Idle Wells	Average Years Idle
Coastal	\$ 3,893,100	\$ 785	\$ 40,000	4,956	21
Inland	\$ 8,445,600	\$ 313	\$ 47,000	27,005	9
Northern	\$ 486,450	\$ 447	\$ 51,000	1,089	13
Southern	\$ 3,740,550	\$ 900	\$ 152,000	4,154	41



Source: CEC analysis of CalGEM data

Notes: Average Cost to Plug Idle Well per district are from a 2018 analysis of Orphan Wells in California by the California Council on Science and Technology (CCST).

Fresno, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura County have idle wells in more than one CalGEM district.

FEATURED TOPIC

IDLE OIL WELLS IN CALIFORNIA

California crude oil production has declined since 1985. As crude production has decreased the number of idle wells in the state has increased, illustrated in California's Crude Production and Long-Term Idle Wells. Idle wells are both an environmental concern and an end-of-life cost to well operators (and potentially to the state). Operators actively will change to idle status as crude oil production naturally declines and the state shifts away from fossil fuels. This issue discusses the post-production life of oil wells and the challenges posed to well operators and the state.

IDLE WELL DEFINITIONS

Over time, a well's production rate will slowly decline until it finally becomes inefficient to actively produce. After 24 consecutive months of not producing, a well goes from active status to idle. Idle wells maintain their status indefinitely (until plugged), but there are cases where an idle well returns to active status if an operator deems it economically viable. Inactive wells fall into one of the following categories:

- **Idle Well:** A well that has not been active for two years or more and has not yet been permanently sealed and retired.
- **Long-Term Idle Well (LTIW):** A well that has been an idle well for eight or more years.
- **Plugged Well:** An Idle Well that has been permanently sealed and retired under state law requirements ([Public Resources Code 3208](#)).
- **Orphan Well:** A well that has no solvent owner of record. The State then becomes responsible for sealing and retiring the well.

The longer a well has been idle, the greater the risk that the well loses casing pressure and potentially leaks. The California Geologic Energy Management Division (CalGEM) designates certain idle wells as LTIW as an identifier for wells with greater potential risk. Environmental risks with these wells, even when plugged. Properly sealing a well reduces those chances greatly, but depending on the well location, depth, and age of the well, it could cost operators a significant investment to properly close them. Often, the annual fee for having unplugged idle wells is much lower than the costs associated with plugging and retiring.

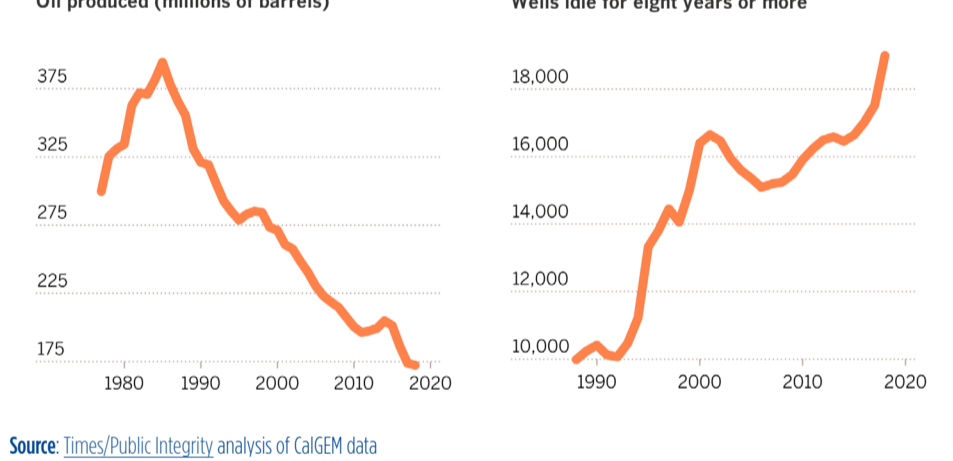
According to CalGEM's [Well Production and Injection Summary Data](#), there were a total of 37,204 idle wells in 2020.

LOCATION OF IDLE WELLS

[Idle Wells by County \(2020\)](#) shows how many idle wells are in each county along with the average number of years they have been idle. Most idle wells are in the Inland District, specifically Kern County. There are 24,058 idle wells in Kern County, which is about two-thirds of the 2020 total. Most of California's crude production is concentrated in this county (see [2020 February Petroleum Watch](#)). The county with the second most idle wells is Los Angeles County with 3,698. The county with the second highest average years idle is Kern County with 2,272. Both counties also follow behind Kern County in total state crude oil production.

[Average Years Idle by County \(2020\)](#) shows the average number of years of idle time per well in that county.

CALIFORNIA CRUDE PRODUCTION AND LONG-TERM IDLE WELLS



Source: Times/Public Integrity analysis of CalGEM data

Kern has the most of these idle wells and the youngest idle wells, averaging eight years of idle time. Los Angeles County and Ventura County have idle wells with longer average idle years of 46 and 52, respectively. Stanislaus County is home to the oldest idle wells, with an average of 86 idle years. All counties have an average of at least eight years idle time across all their idle wells, meaning the average idle well would fall under the LTIW definition. The two exceptions are Napa County (two idle wells) and Butte County (five idle wells), which both average under five idling years.

OPERATORS AND FEES

Unless classified as an orphan well, idle wells are the responsibility of their well owners. [Idle Well Counts by Operator \(2020\)](#) shows the top ten operators in California by number of idle wells. As expected, those with the most production activity in California (see [2021 December Petroleum Watch](#)) are also the operators with the most idle wells. Aera Energy and Chevron U.S.A. are each responsible for over 7,000 idle wells. Additionally, the average idling years of these wells reaches the eight-year mark, pushing them into the LTIW territory.

As of 2018, the annual fees for idle wells follow a structured format based on the number of years a well has been idle:

- \$150 for each well that has been idle for 3 years or longer, but less than 8 years
- \$300 for each well that has been idle for 8 years or longer, but less than 15 years
- \$750 for each well that has been idle for 15 years or longer, but less than 20 years
- \$1,500 for each well that has been idle for 20 years or longer

More information on the fee program can be found from the [California Department of Conservation](#).

Since the fee is structured so that older idle wells cost more, operators with fewer idle wells but older ones usually end up paying more fees than others. California Resources Production Corporation paid the most in total fees for 2020 (\$2,651,550) even though they have fewer idle wells than the two operators with highest counts, Chevron U.S.A. (\$1,776,450) and Aera Energy (\$2,285,250).

COSTS TO PLUG WELLS

Paying over \$2 million in idle well fees every year seems hefty at first, but the associated costs of properly closing the idle wells is much steeper. The California Council on Science and Technology (CCST) published a [study on orphan wells in California](#) that estimated the costs of closing wells within each CalGEM district.

[Idle Well Fees and Associated Costs \(2020\)](#) gives a breakdown of each district and the estimated average cost to plug an idle well there.

Included for context is the number of wells and average years idle for each district. Using these estimates, it would cost around \$198 million for all the idle wells in the Coastal District to be plugged. At just under \$4 million in total annual fees for that district, it would take about 50 years for the total fees to add up to the costs of closing all the currently idle wells.

The Southern District would take even longer due to the greater costs to plug in that area (\$152,000 per well).

Even if an operator in the Southern District only had one idle well, it would still take at least 114 years of paying annual idle well fees before it equals the average cost of plugging a well in that district (assuming the annual fees and estimated costs do not change). Financially, there is no incentive for an operator to front that cost.

EFFECTS AND CONCERNS OF IDLE WELLS

The environmental costs of leaving these idle wells unplugged are not as visible as the financial costs. There are concerns with how these idle wells are [live around them](#) (sometimes without them knowing). When left unchecked, idle wells have the potential to leak carcinogens, methane, and other greenhouse gases into the air or even groundwater sources.

To minimize these leaks, CalGEM has [programs and protocols in place](#) requiring operators to periodically check parameters of their idle wells. Fluid-level testing, casing pressure tests, clean out tag, and other checks provide insights into which idle wells do not meet regulation and require plugging.

Regional Air Quality Management Districts also play a role in idle well monitoring. [One project by the South Coast Air Quality Management District \(SCAQMD\)](#) found two orphan wells in the Los Angeles neighborhood of Echo Park, directly in front of a household on Firmin Street. Through air monitoring, they determined that the emissions from those two orphan wells were above regulation levels. While not posing an immediate threat to those living in the neighborhood, SCAQMD properly plugged the wells to comply with CalGEM protocols and prevent any future harm. SCAQMD also acknowledges the 18 other agencies who assisted with the closure including telecommunication companies, fire departments, city officials, a school district, and various other public agencies.

Raising the annual fees to closer match the costs of plugging could put pressure on operators to plug and retire idle wells. However, the number of parties and diligence demonstrated in the Firmin Street Project speaks to how intricate and involved this task can be. Money aside, it will require highly coordinated efforts between multiple agencies, stakeholders, and communities to plug these idle wells.

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The CEC welcomes feedback on Petroleum Watch. Please contact Media and Public Communications Office at mediaoffice@energy.ca.gov.

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