Impacts of a Statewide Ban on New Construction and Upgrades to Fueling Establishments in California

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About the Author

Brad Williams joined Capitol Matrix Consulting (CMC) in 2011 after serving in various positions in California state government for nearly 33 years. During the past twelve years at CMC, Mr. Williams has been involved in hundreds of projects covering energy and regulatory policy, economic forecasting, economic impact analysis, and state and local government taxation and finance. During his prior three decades in state government, Mr. Williams served in key positions in the State Treasurer's office, Assembly Appropriation Committee and the Legislative Analyst's Office, where he was chief economist and Director of Budget Overview and Fiscal Forecasting. During his government career, Mr. Williams was regarded as one of the state's top economic and fiscal experts, and he was recognized by the Wall Street Journal as the most accurate forecaster of the California economy in the 1990s.

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Executive Summary

Given the emerging movement to ban new or upgraded fueling establishments in California, our firm has been commissioned by the California Fuels and Convenience Alliance to analyze (1) the economic contributions of the Fueling and Convenience industry, and (2) the economic impacts that adoption of a statewide ban – or widespread adoption of local bans – would have on the California economy.
Our findings are as follows:

Regarding the Fueling and Convenience Industry:

- The industry consists of about 10,423 fueling establishments in California, of which about 85 percent, or 8,900 establishments, are connected to convenience stores.
- While California has the second largest number of fueling establishments in the United States, it lags other states in terms of fueling establishments per capita, per driver, or per vehicle miles traveled.
- The industry directly employs about 66,000 workers, and indirectly supports another 59,000 jobs in businesses that supply goods and services to fuel and convenience stores and their employees.
- It also supports nearly $10 billion in taxes paid to state and local governments in California. These revenues support roads, transit, schools and other state and local government services.
- Over 95 percent of fueling establishments are operated by small businesses owners of branded franchisee gasoline establishments or of independent gasoline establishments. About 60 percent of gasoline establishments are operated by owners that own just one station.
- The industry characterized by its diverse ownership and workforce. About 40 percent of establishments are minority owned, and nearly 60 percent of owners are first-generation, foreign-born immigrants – the highest of any industry in the U.S.
- The industry provides many benefits to consumers, including convenience, choices of brands and pricing points, and the ability to save time by combining fueling with other purchases.

Regarding recent and proposed bans:

- As of early 2023, 8 cities in Sonoma, Napa, and Marin Counties, as well as the County of Sonoma, have enacted local ordinances banning construction of new establishments and prohibiting improvements to existing facilities that expand or upgrade fueling equipment and storage.

- Two other cities have placed moratoriums on new construction while their City Councils consider permanent bans, and others, including the City of Los Angeles, are considering bans.

- AB 1614 (Gabriel), introduced in February 16, 2023 requires the California Energy Commission, in consultation with other state and local agencies to conduct a study on the feasibility of phasing out *existing* gasoline fueling stations by a specified date, along with potential incentives and regulatory barriers related to transitioning those stations into electric vehicle charging stations. The study would not look at hydrogen stations.

Regarding what is at stake with respect to a statewide ban:

- Loss of jobs, income and small business ownership opportunities in the fueling and convenience industry.

- Loss of fueling options to consumers, adding time and vehicle miles traveled for refueling activities.

- Less cash-flows generated to support investments by owners of fueling establishments in chargers, hydrogen dispensers, and other alternative fuels.

    - This would be an unfortunate outcome because (1) existing gasoline stations are logical sites for alternative fuel dispensers and (2) CARB has identified hydrogen-powered fuel cell vehicles as an important alternative to battery powered electric vehicles for many Californians, potentially accounting for as much as 20 percent of the new-car market by 2045.

    - There is significant legislative resistance to hydrogen as a clean energy alternative. However, a lack of development in hydrogen infrastructure would leave only one option for California drivers in the future and make them highly vulnerable to electrical blackouts during peak-use periods.

- Less competition, less economies-of-scale and higher prices for gasoline. The price impacts would fall heavily on lower- and moderate-income households, which are less likely to be early adopters of new zero emission vehicles (ZEVs) and thus be more likely to rely on gas-powered vehicles for years to come.

Given these factors, a much better approach would be to allow market forces to determine the level of new construction and remodeling of fueling establishments as California makes the transition to renewable energy.

Background

The fueling and convenience industry plays a key role in California's economy. It is part of the state's fuel production, distribution and retail sales network that has developed over a century and has consistently provided Californians with convenient and reliable fueling options for many decades. In this report, we first review the economic contributions and benefits to consumers provided by the fueling and convenience industry, and then discuss the impacts that a statewide ban (or widespread adoption of local bans) on construction and improvements to fueling facilities would have on Californians.

Number of fueling establishments. According to the California Energy Commission, there were 10,423 fueling establishments in California in 2021.[1] About 85 percent of the total, or 8,850 establishments, were combined with convenience stores. These establishments sold 13.8 billion gallons of gasoline and about 3 billion gallons of diesel during the year, representing average per-establishment sales of 4,400 gallons per day. The total number of establishments has remained stable over the past decade, rising slightly from the 10,219 that existed in 2012 but down slightly from the 10,481 that existed in 2016.

The 2021 total represents 2.65 establishments for every 10,000 Californians. As indicated in **Figure 1** (next page) there are between 2 and 3 establishments per 10,000 population in most large counties. However, there are some outliers. San Francisco has slightly over 1 station per 10,000 population while Kern County has about 4 establishments per 10,000.[2]

[1] California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. California Energy Commission. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting

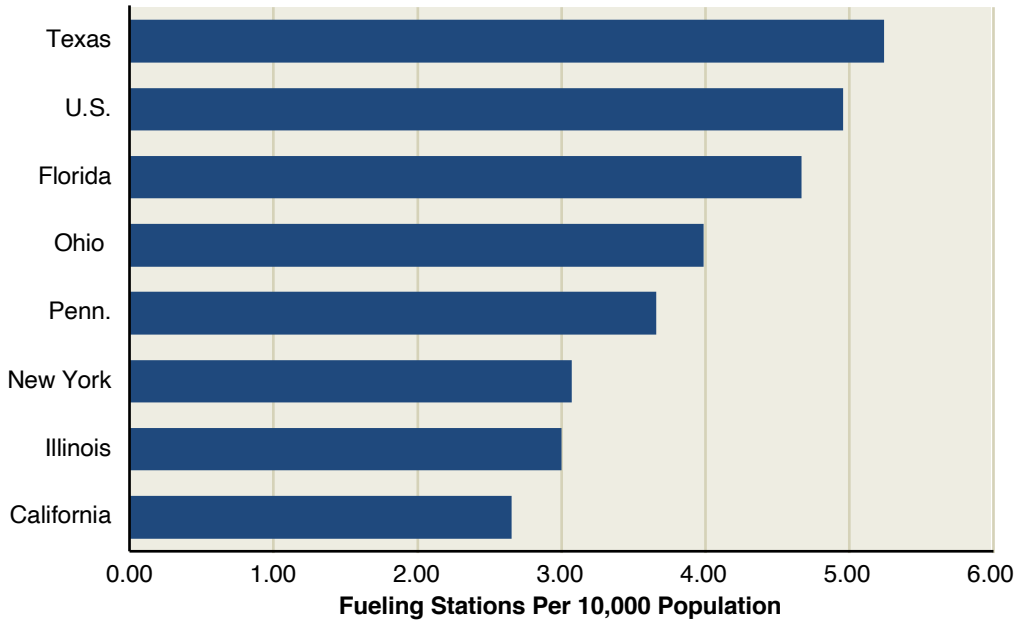
[2] Capitol Matrix Consulting calculations using Energy Commission data for gasoline establishments and California Department of Finance data for population.

Figure 1
Number of Fueling Establishments, Top 15 California Counties

State/County	Number of Establishments	
	Total	Per 10,000 Population
California	**10,423**	**2.65**
Los Angeles	2,058	2.07
San Diego	753	2.29
Orange	647	2.04
Riverside	572	2.36
San Bernardino	620	2.84
Santa Clara	407	2.13
Sacramento	387	2.45
Alameda	380	2.29
Kern	379	4.18
Fresno	369	3.66
Contra Costa	289	2.49
San Joaquin	250	3.20
San Mateo	199	2.65
Ventura	195	2.32
San Francisco	91	1.07
All other Counties	2,827	4.12

California has fewer fueling establishments per-capita than other states. California has the second largest number of fueling establishments in the country, trailing only Texas. However, the state has a relatively smaller number stations when measured on a per-capita, per-driver, or per-vehicle-miles-traveled basis. As indicated in Figure 2 (next page)**,** the 2.65 establishments per 10,000 residents in California compares to 5.2 per 10,000 residents in Texas, 4.90 per 10,000 residents nationally, and 4.7 per 10,000 residents in Florida. As discussed below, gas station density is one key factor accounting for differences in price paid at the pump. Policies further reducing gasoline station density in California means less competition, fewer choices for consumers and likely higher prices at the pump.

Figure 2
Fueling Establishments Per 10,000 Population, California Versus Other States

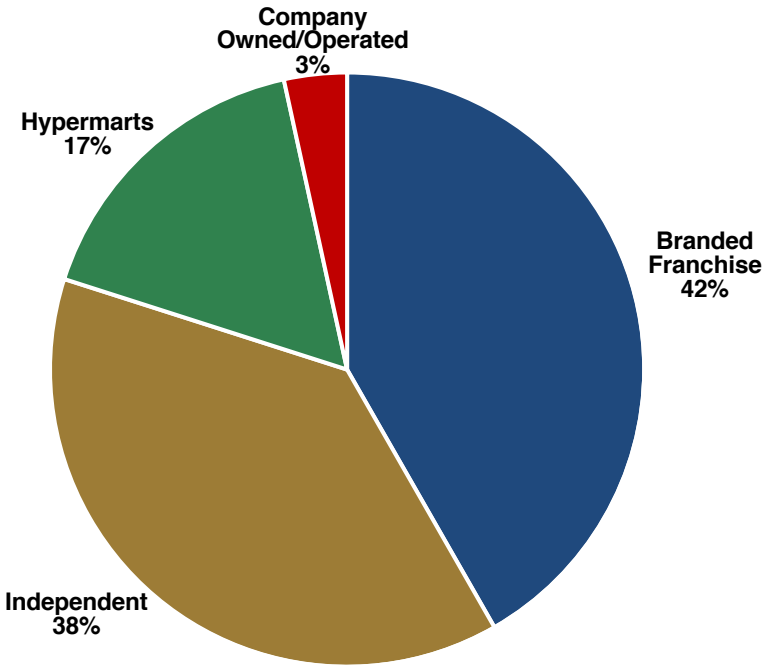


Most fueling and convenience stores are operated by small business owners.

Only a limited amount of fuel is sold by stores that are owned and operated by major oil companies. As indicated in **Figure 3** (next page), the great majority is sold through small-business – either "branded franchisees" or through independent fueling establishments and convenience stores, such as 7-11 or Circle-K. About 17 percent of fuel is sold through "hypermarts," which are high-volume independents owned by companies such as Safeway, Sam's Club, Walmart, and Costco.[3] (See box on page 7 for definitions of terms used in this report.)

[3] "Petroleum Watch, January 2020." California Energy Commission. https://www.energy.ca.gov/sites/default/files/2020-02/2020-01_Petroleum_Watch.pdf

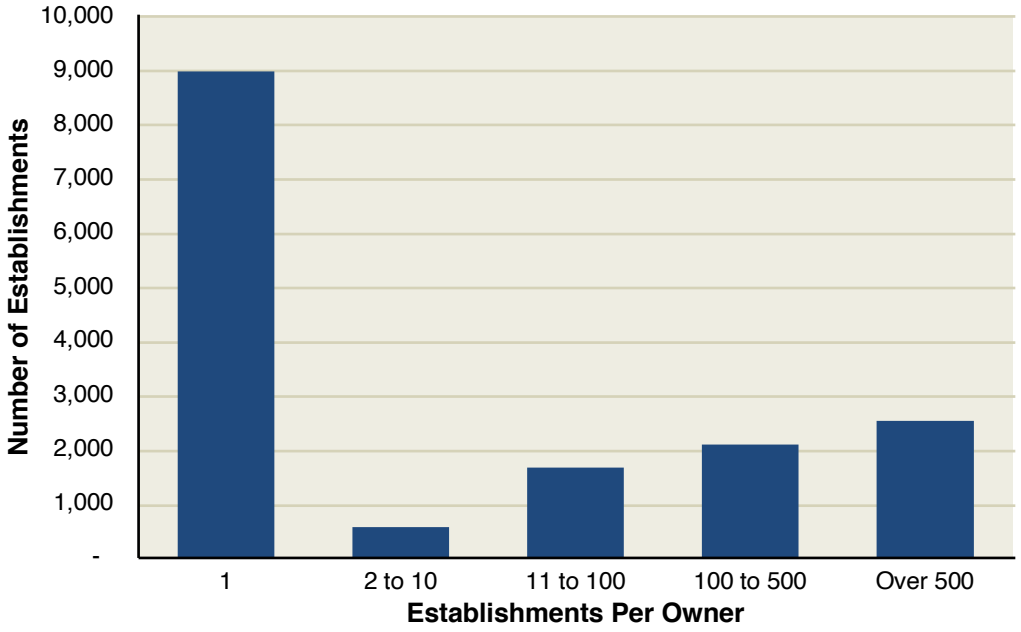
Figure 3
Distribution of Fueling Establishments in California
By Type of Ownership



As another indication of the "mom and pop" nature of the fueling station industry, **Figure 4** (next page) shows that of the 15,000 fueling establishments in the Western U.S., 9,000 are operated by owners that operate just one fueling station.[4]

[4] Industry data from the California Fuels and Convenience Alliance.

Figure 4
Distribution of Fueling and Convenience Stores
By Number of Establishments Per Owner



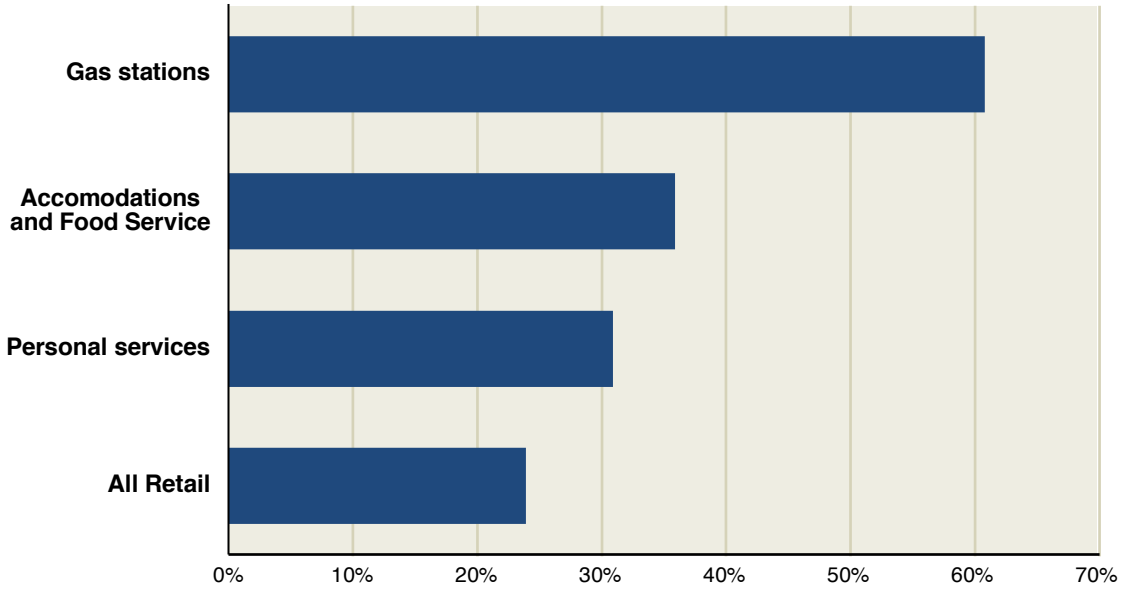
Key Definitions in the Fueling Industry

- **Branded Fueling Stations:** Gasoline establishments that have entered into an agreement with a major oil company to sell only their proprietary fuel blends under designated street branding. Proprietary additives include Techron by Chevron and V-power by Shell. Examples of branded fuels are 76, Chevron, Exxon Mobil, Shell, and Valero.
- **Unbranded Fueling Stations:** Gasoline establishments that are not restricted to any one major oil company's proprietary fuel blend and cannot carry a major oil company's street branding. Examples of more notable unbranded stations are Rotten Robbie and Sinclair**.**
- **Hypermarts:** Large retail suppliers of general merchandise or groceries that also sell gasoline. Examples of hypermarts are Costco, Safeway, and Sam's Club.

The fueling and convenience industry has a diverse workforce and ownership. According to American Community Survey data, about 32 percent of California fueling and convenience industry employees are non-Hispanic White, 20 percent are Hispanic, 29 percent are Asian, 9 percent are African American, and 9 percent are other races (including multiple races). About 57 percent of employees are male and the other 43 percent are female.

The industry provides flexible of hours for employees needing to combine earning extra income with other family obligations.The fueling and convenience industry also provides pathways to business ownership for Californians of all races and ethnicities. According to U.S. Census data, about 43 percent of establishments in California are minority-owned, and 61 percent of U.S. gas station owners are foreign born, the largest percentage of any industry (see **Figure 5**).[5]

Figure 5
Percent of Business Owners that Are Foreign Born



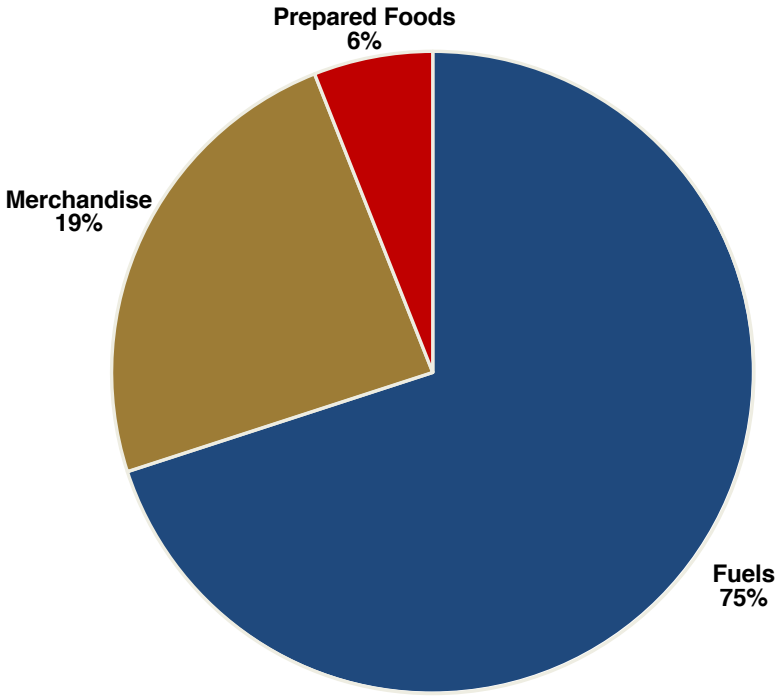
Economic Impacts of the Fueling and Convenience Industry

Our analysis in this section focuses on the 10,423 retail establishments selling gasoline, including stand-alone gasoline stations and those that combined gasoline stations with convenience stores. Our analysis does not include impacts of the approximately 3,500 convenience stores not having fueling dispensers.

[5] Data on minority-owned business from U.S. Census Bureau, Annual Business Survey: Statistics for Employer Firms by Industry, Sex, Ethnicity, Race, and Veteran Status for the U.S., States, and Metro Areas: 2020. https://data.census.gov/table?g=0400000US06&n=44711&tid=ABSCS2017.AB1700CSA01. Data on percent of owners that are foreign born is from "Bringing Vitality to Mainstreet. How Immigrants Small Businesses Help Local Economies Grow." David Dyssegaard Kallick, Director of the Immigration Research Initiative, Fiscal Policy Institute. January 2015. https://www.as-coa.org/sites/default/files/ImmigrantBusinessReport.pdf

The fueling and convenience industry is a major source of economic activity in California. It is directly responsible for 66,300 jobs, $2.8 billion in wage income plus another $560 million in non-wage benefits.[6] We estimate that the industry accounts for over $71 billion in sales, of which $53 billion (75 percent of the total), is related to fuel, $14 billion (19 percent of the total) is related to merchandise and $4 billion (6 percent of the total) is food service (see **Figure 6**).

Figure 6
Distribution of Sales for Typical Fueling and Convenience Store



In addition to its direct impacts on sales and employment, the fueling and convenience industry indirectly supports jobs and income in other sectors of the economy. These include local and regional businesses that supply products and services to fueling and convenience establishments. Supplying businesses include wholesalers and distributers of fuel, merchandise, food and equipment, as well as utilities and businesses providing maintenance, repair, delivery, and accounting services. These are referred to as *indirect* impacts. As one example of indirect impacts, the National Association of Convenience Stores estimates that the California convenience and fueling industry spent $464 million on utilities last year.

[6] Job and labor income estimates tie to the Quarterly Census of Employment and Wages maintained by the California Employment Development Department (https://labormarketinfo.edd.ca.gov/qcew/cew-select.asp) as well as Non-employer Statistics maintained by the U,S. Census Bureau (https://www.census.gov/programs-surveys/nonemployer-statistics/data/tables.html). Job estimates from the National Association of Convenience Stores (NACS) are substantially higher than these government-based numbers. The NACS estimate for all convenience stores and fueling stations is 193,200. Part of the difference is because the NACS includes convenience stores without fuel dispensers, which is not the focus of this report.

In addition, expenditures by the households of employees of the fuel and convenience industry generate sales, jobs, and wages in a wide range of industries, including restaurants, retail establishments, real estate offices, entertainment venues, medical services, and other professional services. These are referred to as *induced* impacts. For simplicity, the indirect and induced impacts are often combined and referred to as the *multiplier* impacts.[7]

Figure 7 shows that when multiplier impacts are included, the fuel and convenience industry supports a total of 125,400 jobs in California's economy. This includes 66,300 employees and owner/operators working in the fueling and convenience businesses, plus 59,100 jobs in other supplying industries. The fueling and convenience industry also supports $5.7 billion in labor income and $15 billion in gross state product.

Figure 7
Estimated Economic Impact of the Fueling and Convenience Industry - 2022 (Dollars in Billions)

Impact	Jobs	Labor Income	Gross State Product
Direct	66,300	$2.800	$8.470
Multiplier	59,100	$2.920	$6.550
Total	**125,400**	**$5.720**	**$15.020**

These economic impacts are for annual *operations* only. They do not include the economic benefits flowing from construction and remodels that take place each year. Regarding remodels, industry surveys indicate that about 11 percent of fueling and convenience establishments are remodeled each year, at an average expenditure of about $600,000 per facility.[8] We estimate that these remodels result in about $650 million in contract spending annually, which in turn supports thousands of jobs and generates income for workers in building and trade occupations.

State and Local Revenues Generated by the Fueling and Convenience Industry

The fueling and convenience industry supports about $9.7 billion in state and local taxes in California each year (see **Figure 8,** next page**).** The total can be broken out into two main categories. The first is excise and local sales taxes applied to motor-vehicle fuels, which primarily support state and local transportation and transit projects. We estimate these taxes will total about $8.8 billion in 2022-23. The second is the sales, property, income, utility-users, and other state and local taxes imposed on fueling and convenience operations as well as their employees. We estimate that these taxes combined totaled about $800 million during the year.

[7] We use the IMPLAN input-output model of the California economy to estimate multiplier effects.

[8] Based on industry data from the California Fuels and Convenience Alliance.

Figure 8
State and Local Taxes Supported by the Fueling and Convenience Industry 2022-23

Taxes on Gasoline:	Annual Amount (In millions)
Gasoline/Diesel excise tax	$7.450
Local Sales tax on fuel and other taxable items sold	$1,380
Other Taxes:	
Property Tax on establishments	$180
State/local taxes on profits and employee income/spending	$660
Total	**$9,670**

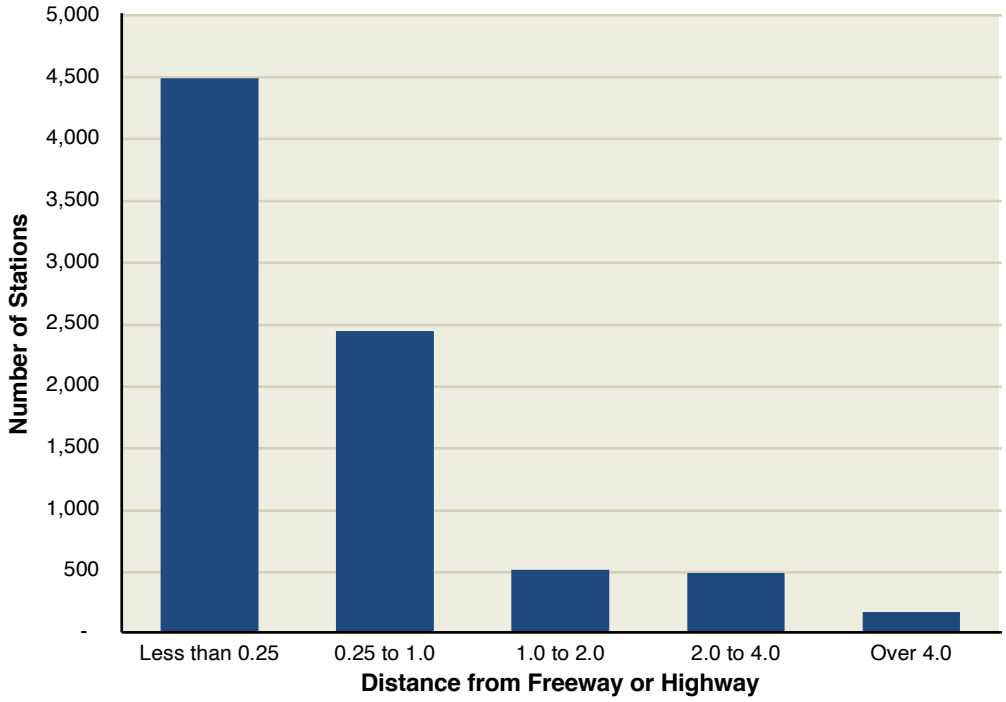
Benefits of a Robust Fueling and Convenience Industry to Households and Businesses

While the jobs, income and taxes attributable to the fuel and convenience industry are important, the main beneficiaries of a robust industry are California's 21 million licensed drivers, which benefit from the convenience and reliability of the network of fuel distribution and sales that has evolved over 100 years. "Range anxiety" is not a concern for drivers of gasoline-powered vehicles. There are plenty of fueling options almost wherever and whenever motorists travel in California, and there is virtually never a concern about the quality of the fuel. There is also plenty of redundancy, so if a station is out of commission, there is likely to be another one within a few miles, if not a few blocks.

Most households and businesses in urban areas are located within a few minutes of fueling establishments and, just as importantly, the majority of establishments are located near major thoroughfares. As indicated in **Figure 9** (next page), slightly over one-half of all fueling establishments in California are located within one-quarter mile of a highway or freeway, and over one-quarter more are located between 0.25 and 1.0 miles from these main thoroughfares.[9]

[9] Source: California Energy Commission, Petroleum Watch. January 2020.
https://www.energy.ca.gov/sites/default/files/2020-02/2020-01_Petroleum_Watch.pdf

Figure 9
Number of Establishments Distributed by Distance from Freeway or Highway



Refueling takes less than 5 minutes – often less than 3 minutes – and fuel purchases can be combined with purchases of prepared foods, snacks, beverages, and household items, further saving time for motorists.[10] Shoppers benefit from convenient locations, extended hours of operation, one-stop shopping, grab-and-go food service, and fast transactions. Regarding "inside purchases," a national association of convenience stores speed metrics study found that it takes customers, on average, 3 minutes and 33 seconds from the time they leave their cars until the time they get back in their cars with a purchase.[11] For motorists traveling for business purposes, the time savings associated with both refueling and convenience purchases translate into higher productivity and more profit.

[10] See, for example, "Staying Safe at the Pump." American Petroleum Institute. https://www.api.org/oil-and-natural-gas/consumer-information/consumer-resources/staying-safe-pump#:~:text=But%20the%20average%20fill%2Dup,be%20discharged%20at%20the%20nozzle.

[11] See "Time Counts. Digital technologies help customers save time—still the No. 1 criteria for a convenient shopping experience," Chris Blasinsky, National Association of Convenience Stores Magazine. October 2020. https://www.nacsmagazine.com/issues/october-2020/time-counts

Local Bans to-Date

As of mid-February 2023, eight cities in Marin, Sonoma, and Napa counties have approved bans on new gasoline establishments or improvements to existing establishments (see **Figure 10**). These cities have a combined population of 339,000, or about 0.9 percent of the statewide total. In March 2023, the Sonoma County Board of Supervisors adopted a ban that will affect stations in the unincorporated areas of the County. Two additional cities have passed moratoriums on new establishments while their city councils debate more permanent bans. Several other local entities are considering bans, including the cities of Los Angeles, Cloverdale, Healdsberg, and Sonoma, as well as Napa County.[12]

Figure 10
Local Fueling Station Construction Bans Enacted in California to Date

City (County)	Population	Date
Petaluma (Sonoma)	59,403	March 2021
Calistoga (Napa	5,187	December 2021
Rohnert Park (Sonoma)	44,411	March 2022
Sebastopol (Sonoma)	7,448	April 2022
Cotati (Sonoma)	7,498	June 2022
Santa Rosa (Sonoma)	136,938	August 2022
Novato (Marin)	52,708	August 2022
Windsor (Sonoma)	26,039	October 2022
County of Sonoma	146,739*	March 2023
Moratoriums Passed		
American Canyon (Napa)	21,605	March 2021
San Anselmo (Marin)	12,693	February 2023

* Population in unincorporated areas of Sonoma County.

[12] Based on CMC review of local ordinances. A listing of cities that have adopted local ordinances, as well as language contained in local ordinances is provided by the Coalition Opposing New Gas Stations (CONGAS). https://con-gas.org/resources/

The ordinances that have been enacted to-date prohibit construction of new fueling facilities and prohibit improvements and alterations to existing establishments. The restrictions on improvements and alternations apply broadly to all items related to the sales, storage, conveyance, and dispensing of gasoline or other fossil fuels. The ordinances generally allow exceptions for maintenance, as well as installation of hydrogen dispensers and electrical chargers. We note that these exceptions have been opposed by environmental groups, which assert that (1) charging should be done at home and workplaces, and (2) installation of chargers and hydrogen dispensers will sustain operations of fueling establishments, thereby delaying the phase-out of petroleum-based fuels. The ordinances also allow exceptions for specific public health and safety purposes, such as when the city determines the investments will improve traffic safety or water quality. Modifications for purposes unrelated to the storage, conveyance, and dispensing of fuel would continue to be allowed, though in reality the incentives for such upgrades will be diminished due to the strong connection between fueling sales and "inside sales."

Legislative Proposal to Study a Statewide Ban

AB 1614 (Gabriel), as amended on April 26, 2023, goes a step further by requiring the California Energy Commission, in coordination with the California Air Resources Board, the Governor's Office of Business and Economic Development, local air districts, and local governments to conduct a study on the feasibility of phasing out *existing* gasoline fueling stations by a specified date. The study is to include an assessment of potential incentives and regulatory barriers for gasoline fueling stations to convert to electric vehicle charging stations. The bill ignores transition incentives for dispensers of hydrogen or other alternative fuels (discussed further in the following section), which could play important roles in California's renewable energy future. The study would be due by June 30, 2026.

Impacts of a Statewide Ban

Bans on fueling station construction and improvements will not accelerate the transition to zero emission vehicles (ZEVs). However, such bans and shutdowns *will* hurt California workers, small business owners and consumers in multiple ways.

Fewer jobs and entrepreneurial opportunities. A statewide ban will result in fewer jobs and opportunities for small business ownership. At stake would be significant share of the 125,000 jobs currently supported by the industry. A statewide ban would also eliminate potentially thousands of building and trades jobs associated with new construction or remodeling of existing facilities. Given the synergy between fuel sales and inside sales, restrictions on investments in dispensing equipment and storage will make non-fuel-related investments less attractive as well.

Loss of fueling options for drivers, especially in growing communities. One of the major problems created by a statewide ban is that it fails to consider the dynamic nature of California's population and its economy. Even in the case where statewide fuel consumption is flat or declining, fuel consumption within specific local markets can be increasing sharply, due to local population increases, new residential and business development, and changes in transportation patterns. A statewide ban is a blunt instrument that fails to recognize varying circumstances that motorists face throughout California.

To provide an indication of how dynamic fuel consumption patterns can be, we reviewed California Energy Commission data on fuel sales in California's 369 cities. **Figure 11** shows that over the 9-year period between 2012 and 2021, statewide fuel consumption fell by 9 percent. (The decline was driven by the Covid-19 pandemic, which temporarily depressed vehicle miles traveled in 2020 and early 2021.) Underlying this 9 percent statewide decline, however, were 134 cities that experienced fuel sales *increases* averaging 28 percent, and 235 cities that experienced fuel sales decreases averaging 22 percent.

Figure 11
Change in Gasoline Consumption by City: 2012 to 2021

	Number of Cities	Cumulative Change (Millions of Gallons)	Unweighted % Change 2012-2021
Increases	134	582	28%
Decreases	235	-1,013	-22%
Total	369	-431	-9%

Similar divergence between regions is reflected in county-level data related to fueling establishments and population. Between 2016 and 2021, the total number of fueling establishments in the state fell by 56. Underlying this total, however, were 24 counties that experienced increases totaling to 164 establishments, and 34 counties that experienced decreases totaling to 220 establishments. Similarly, total California population increased by 201,000 between 2016 and 2021. This consisted of 39 counties that experienced a total increase of 548,000 people, offset by 19 counties with population decreases totaling 347,000.

The key point conveyed by this data is that California is a dynamic state, with population, fueling establishment and sales patterns varying significantly from one community to another. In this environment, a statewide ban on all new fueling establishments would be a blunt tool. In particular, its effects on drivers in growing areas could be substantial. In these expanding areas, especially, motorists will have fewer fueling options, will need to travel longer distances to refuel, and will likely have to pay more for gasoline due to less competition among retailers (see discussion below).

While impacts on growing communities will be the most severe, impacts on communities experiencing steady or declining fuel demand may also be significant due to changes in consumption patterns within the areas. For example, if an establishment were to close on one route due to completion of a thoroughfare that diverts traffic, there would no longer be the opportunity for a replacement station to be built in a more favorable location. Similarly, hypermarts such as Costco or Sam's Club sometimes move locations within communities due to the need for more floorspace, more parking, or better customer access. A gas station ban would require a hypermart considering such a move to either give up fueling dispensers in the new location or to forgo the move and remain in a suboptimal location. Either way, the impacts on consumers would be negative.

Less investment in renewable fueling infrastructure. Existing ordinances banning construction and improvements to fueling establishments contain exemptions for installation of chargers and hydrogen fuel dispensers. However, owners of fueling establishments that are precluded from upgrading existing fueling facilities will be less likely to generate the cash-flows needed to support investments in these new technologies – especially in the near term, prior to when the uptake of zero emission vehicles has reached significant levels.

This would be an unfortunate outcome, given the enormous challenge California faces in building an infrastructure sufficient to support a transportation system based on renewable fuels.

Of particular concern is the loss in opportunities to build a hydrogen fuel infrastructure. In its 2022 annual review of hydrogen vehicle and fueling markets, the California Air Resources Board indicated that that that meeting California's Zero Emission goals "will require growth of hydrogen fueling and fuel cell electric vehicles (FCEVs) alongside battery-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), *as auto manufacturers need to provide technology options for all vehicle segments, vehicle use patterns and behaviors, and individuals' access to ZEV fueling and charging infrastructure" (italics* added for emphasis.*)*[13] As one example, FCEVs would be a logical alternative for the millions of California families living in apartments where there is a lack of dedicated space – and in some cases a lack of adequate electrical infrastructure – for overnight charging of battery powered vehicles.

The primary scenario evaluated in CARB's *2020 Mobile Source Strategy* found the potential for more than 20 percent of the new car market to be met by FCEVs by 2045. California would need thousands of hydrogen fueling stations to support a FCEV fleet of this size, yet as of early March 2023 the state only has 63 operating retail stations in place.[14] Existing and prospective fueling stations would be particularly well suited for delivery of hydrogen as well as other renewable fuels.

[13] See page viii of "2022 Annual Evaluation of Fuel Cell Electric Vehicle Deployment and Hydrogen Fuel station Network Development," California Air Resources Board. https://ww2.arb.ca.gov/sites/default/files/2022-09/AB-8-Report-2022-Final.pdf.

[14] California Energy Commission, Hydrogen Refueling Stations in California. https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/hydrogen-refueling

We also believe that greater emphasis should be placed on financial incentives for hydrogen fuel stations, given the importance of establishing a viable fueling network for fuel-cell vehicles in the state. This is especially true given that up-front installation costs for hydrogen stations can range up to several millions of dollars per station.

Along these lines, *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment* (AB 2127 assessment) has become the state's principal planning document relating to fueling infrastructure needed to support ZEV-related fueling needs under Governor Newsom's executive order N-79-20 and CARBs Advanced Clean Car II regulation (both of which require that zero emission vehicles account for 100 percent of new cars sold in California by 2035.) Unfortunately, the document focuses exclusively on charging infrastructure, even though CARB's 2020 Mobile Source Strategy identifies a potentially major role for hydrogen vehicles, and there remains considerable uncertainty about how renewable technologies will evolve in the future. For these reasons, we believe that the AB 2127 assessment should be broadened to include hydrogen as well as other renewable fuels.

Reduced competition and higher retail fuel prices. There have been numerous studies examining differences in retail gasoline prices between communities and between states. These studies have found several factors are responsible for price differences. At the state level, key factors include differences in state and local taxes, environmental fees, costs of producing reformulated gasoline, and market factors at every stage of the supply chain. Differences within states can also be due to varying costs of land and construction, operating expenses for energy and labor, distance of the station from major terminals, and local government permitting restrictions. Demand-side factors also play a role, such as differences in consumer preferences and loyalties to specific brands, and the distribution of household income in a locality.

However, a key factor affecting retail prices is the degree of competition between establishments and barriers to entry.[15] On this front, California is already at a disadvantage to other states across the country, which have, on average, nearly twice the number of establishments per-capita as California.[16] The reduced competition among retail establishments is often cited as a factor contributing to California's above-average retail prices (beyond what is explained by higher taxes and environmental charges as well as tight wholesale markets).[17] A statewide ban would further reduce the number of gas establishments relative to population in California, as establishments close and are no longer replaced. The result would likely be less competition and higher prices for consumers, especially in communities where station shortages emerge.

[15] See for example: Marvel, Howard P. "Competition and Price Levels in the Retail Gasoline Market." *The Review of Economics and Statistics* 60, no. 2 (1978): 252–58. https://doi.org/10.2307/1924978; "Gasoline Explained: Regional Price Differences." U.S. Energy Information Administration. https://www.eia.gov/energyexplained/gasoline/regional-price-differences.php

[16] See for example, Dave Hackett, "California Gasoline Prices – Part 2," Stillwater Associates, June 26, 2019. https://stillwaterassociates.com/california-gasoline-prices-part-2/

[17] Ibid.

The impacts of price increases and loss of consumer choices will be regressive, to the extent that low- and-moderate income Californians are less likely to be early adopters of ZEVs and thus, will bear the brunt of fewer gasoline establishments and higher fueling costs.

Conclusion

Aside from being a major economic force in California, the fuel and convenience industry provides numerous benefits to California motorists, including convenience, reliability, and many choices of brands and pricing points. A statewide ban on new gasoline station construction and improvements to existing facilities would have multiple negative impacts on Californians. These include losses in industry jobs and income, as well as a loss in small business-ownership opportunities for California's diverse population. Just as important, bans will hurt California motorists, who will need to travel further and pay more for fuel. The impacts would fall heavily on lower- and moderate-income households, which are less likely to be early adopters of more expensive ZEVs, and thus will exposed to the impacts of the ban on consumer choice and gasoline prices. Given these factors, a much better approach would be to allow decisions about new construction and remodeling of fueling facilities during the transition period to renewable energy to be determined by local supply and demand for fuel.