

CALIFORNIA



IN DANGER

**WHY THE DREAM IS DYING
AND HOW WE CAN SAVE IT**



by Michael Shellenberger

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California in Danger

Why the Dream is Dying and How We Can Save It

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Environmental Progress is an independent non-profit 501c3 organization with the mission of lifting all humans out of poverty while reversing humankind's negative environmental impact.

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Executive Summary

California today is frequently held up as a progressive model for the rest of the United States. In 2011, California had a \$27 billion budget deficit. Today, it has a \$19 billion budget surplus. In 2012, Californians voted to raise income taxes, particularly on the wealthy, to increase funding for under-performing schools. The state is a renewable energy leader. And its leaders are standing up to President Donald Trump on everything from immigration to marijuana to offshore oil drilling.

But a closer look reveals deeper problems. California is the most expensive state for housing in the country after Hawaii, and today is suffering from one of the most severe homelessness crises in its history. In the face of a housing shortage, Millennials, renters, and employers are fleeing the state. High housing prices siphon away from the productive economy \$140 billion annually. At the state and local level, Democrats and progressives have responded by mandating and extending subsidies for low-income housing. But not only are the subsidies and mandates inadequate to meet demand, they also serve to make housing more expensive for the middle-class.

California's high cost of living is a major factor behind the state having the country's highest rate of poverty and inequality. When the cost of living is taken into account, California still spends less on K-12 education than all but four other states. California's income taxes are high but so is its sales tax, which is regressive, while property taxes are low and disproportionately burden new and young homeowners. While the *operating* budget is in surplus, the state is leaving its young with a \$366 billion public pension and health care debt.

In truth, California is neither progressive nor a model for other states. What's behind California's high cost of living are tax, regulatory, and other policies that are regressive and parasitical. Well-financed NIMBY (Not In My Back Yard) activists and a small minority of labor unions defend exclusionary laws that prevent homebuilding, in both cities and suburbs. Public employee unions maintain retirement benefits far larger than those received by most private sector workers (and taxpayers). And well-connected energy

companies win large state contracts which contribute to rising electricity rates and air pollution.

California maintains its reputation as a progressive leader by greenwashing the scarcity and brownwashing the exploitation created by state policies and interest groups. NIMBYs insist they are protecting the natural environment as they prevent greater urban density and promote cattle ranching, which threatens the biodiversity of California's oak woodlands. Gov. Brown deploys apocalyptic rhetoric regarding climate change as his administration shuts down the state's largest single source of low-carbon energy. And state officials defend immigration as they maintain and defend a system of semi-indentured servitude for immigrants.

California has routinely reformed its government in the past and must do so again today. This begins with a vision of a high-productivity and high-wage economy. The coming autonomous vehicle (AV) revolution could destroy many jobs but also create many others, particularly in California, where Silicon Valley is a major actor in automation. This AV revolution also creates significant opportunities for new housing and reductions in carbon emissions through a transition to electric and fuel cell vehicles at a cost far lower than Gov. Brown's proposed railroad.

Under this plan, California would

- **Curb corruption** with a New Sunshine Act that requires transparency into government contracting, permitting, regulating and other activities, and break up the corrupt California Public Utilities Commission (CPUC);

- **Build abundant housing** by up-zoning all cities and suburbs to allow modestly taller buildings, and by closing the loophole in the state's most important environmental law (CEQA) that allows interest groups to file expensive and frivolous lawsuits anonymously and repeatedly;

- **Create high-paying jobs in advanced manufacturing, biotech, and innovative agriculture** by leveraging the state's research universities and community colleges in partnership with new and modernized industries and capturing scale-ups from R&D;

- **End poverty** by raising the minimum wage, embracing automation, including the autonomous vehicle revolution, and mandating high school and college apprenticeship partnerships with advanced manufacturing and other industries;
- **Personalize and modernize education** by establishing a 9-to-5 school day that results in the elimination of homework for students, and of schoolwork for teachers; an incremental lengthening of the school year; and unleashing the special talents of all students through digital instruction and teacher tutoring;
- **Make property taxes fair and sustainable** by empowering a representative “citizens jury” to undergo a year-long evidence-based deliberation that culminates in an amendment to California’s constitution;
- **Establish and enforce the principle of universal worker rights** for all social classes by demanding the federal government create a path to citizenship for a labor force lacking political rights and power; reforming public pension obligations; and making pension contributions the responsibility of future public employees.

This plan can unify workers, employers, and taxpayers. Workers will benefit from higher wages and cheaper housing. Employers benefit from being able to grow their high-wage and high skill business in California. And Baby Boomer homeowners will benefit from the creation of housing their children and grandchildren can afford.

This coalition should be enough to overcome well-funded interest groups. School teachers, principals, and parents will benefit from a modernized school day and year, higher pay, and better outcomes. The labor unions whose members lack housing they can afford greatly outnumber the small number of unions opposing CEQA reform. And pro-density environmentalists are younger and growing in power over anti-development NIMBYs.

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Introduction

Over the last two years, as I've travelled around the world speaking out in defense of nuclear plants at risk of being replaced by fossil fuels, I am invariably asked two questions. First, why did I change my mind about nuclear energy? And, second, why are other people still so opposed to it?

When it comes to most questions about energy and the environment, my answers tend to come more quickly and confidently over time. But over the last two years, as I was asked these questions, particularly the second one, I found myself increasingly slow to respond until, toward the end of last year, I started answering, "That's a very interesting question," which was code for, "I'm not sure if I know."

I wrote *California in Danger*, in part, because I wanted to answer that question. Why were people who claimed to be deeply concerned about climate change shutting down its two largest sources of low-emissions electricity, San Onofre and Diablo Canyon nuclear power plants, rather than seeking to expand them?

A big part of the answer, I knew, is that people are ignorant of the facts. They believe things about energy generally, and nuclear and renewables specifically, that are simply not true. Those of us, myself included, who changed our minds tend to remember learning the truth about, say, Chernobyl, and emphasize the "a-ha!" moment of our conversion.

But this fact-based explanation is plainly inadequate for understanding the persistence of anti-nuclearism. When pressed, some of nuclear's fiercest opponents acknowledge the science showing that nuclear is low-emissions and even that it is relatively safe but continue to oppose it anyway. Opposition to nuclear energy is clearly motivated by deeply-held values, world views, and fears that are not so easy to alter.

What are they? For many it is clearly the fear of a high energy, high population, high-tech, and highly modern planet that is (supposedly) devoid of nature and spiraling out of control. A better

alternative, they feel, would be a low-energy planet powered by renewables where humans accept nature's limits and accordingly live simpler lives.

While the anti-nuclear belief system is often described as idealistic, in his history of the origins of the anti-nuclear movement, *Critical Masses: Opposition to Nuclear Power in California, 1958-1978*, the historian Thomas Wellock points to a darker motivation: the exclusion of newcomers.

In the 1960s, nuclear energy was understood to provide abundant and inexpensive power. While most Californians at the time saw cheap electricity as a positive thing, others — including the then-Executive Director of the Sierra Club, David Brower — did not. They believed cheap energy would attract people and industry to the Golden State and destroy its scenic character.

"The discredited theories of nineteenth century economist Thomas Malthus were taken off the shelf and put back to work," Wellock writes. The message of neo-Malthusians, "was that humanity had to restrict its demands on nature to avoid catastrophe."¹

The paradox was that nuclear energy, in several fundamental ways, significantly reduces humankind's demands on nature. With nuclear energy there is no need to mine and burn coal, drill for oil and gas, or dam wild rivers for electricity — a fact widely recognized by scientists, politicians, and informed members of the public (including Brower's boss and colleagues at the Sierra Club) in the 1960s.

But since nuclear provided cheap and abundant power it would attract more people, Brower reasoned, who would destroy California's landscapes with factories and — here's where we arrive back at the situation California faces today — more housing.

Most people who oppose nuclear energy, of course, have never heard of Malthus and would be appalled by his brazenly misanthropic ideas. Most people who fear nuclear have simply been misled.

But others, particularly the founders and leaders of the anti-nuclear movement — a remarkable number of whom hailed from California

— shared an impulse to exclude with Malthus and the neo-Malthusians.

Whether limits are being imposed on aid for Irish farmers in Malthus's time, on black and Asian-American families seeking to buy a home in Berkeley in the early 20th Century, or middle-class Millennials today, what's being expressed is the will to exclude others from property and prosperity.

The impulse to exclude and restrict access is, in many instances, understandable and wholly justifiable. Few Californians would support the building of high rises in Yosemite, or the conversion of Napa's wineries and cattle ranches into subdivisions. Many of us who move here — and pay dearly to remain — do so in part to enjoy its spectacular natural environments.

But more than 40 years of exclusionary housing, energy, taxation, and regulatory policies have made California increasingly the province of the affluent, those who bought homes here years ago, and their subsidized service class. Those being excluded are the young, the poor, and the propertyless. "The country doesn't need to embrace the willy-nilly destruction of structures of genuine historic value," writes Matthew Yglesias, "*but progressives must see that scarcity is the enemy of equality.*"²

As this report documents, there is abundant land for large quantities of new housing in cities and suburbs, which are far less dense than those on the East Coast. And there's even some room for new homes on farms and cattle ranches, which comprise five times more of California's land mass than its urban areas, and are not nearly as sustainable (or scenic, for that matter) as many of us were taught to believe.

Of course, the fact that there is abundant land for new housing is no more likely to persuade NIMBYs to accept homebuilding near them than the truth about Fukushima is likely to persuade them to accept the continued operation of Diablo Canyon. The will to exclude others — to keep this special state (or at least our precious little bit of it) to ourselves — will remain a powerful force within the Golden State for years to come.

But the pro-scarcity coalition is also aging, weakening and threatened by a countervailing movement of younger and hungrier newcomers advocating inclusion and abundance. A coalition founded on those values could challenge and eventually overthrow the old regime. But for that to happen, it will need a new vision of California grounded in current physical, economic, and technological realities, and animated by values at once humanistic and ecological. It is my hope that *California in Danger* will contribute to the shaping of that vision and to the uniting of that coalition.

Section One: The Dream in Danger

A. The California Dream

To many observers, the California Dream appears to be alive and well. America's most populous state is the global leader in innovation, from digital media³ to autonomous vehicles⁴ to personalized cancer treatments.⁵ We are a progressive leader when it comes to individual freedom.⁶ We regularly win headlines for our environmental policies.⁷ And our cities, industries, and universities are increasingly diverse, attracting the best and brightest from around the world.⁸

Much has changed since 2011 when California was ravaged by recession and burdened with a \$26 billion budget deficit.⁹ The housing crash and recession forced Californian counties into bankruptcy. Republican Presidential Candidate Mitt Romney warned, "America is going to become like Greece, or like Spain, or Italy, or like . . . California."¹⁰

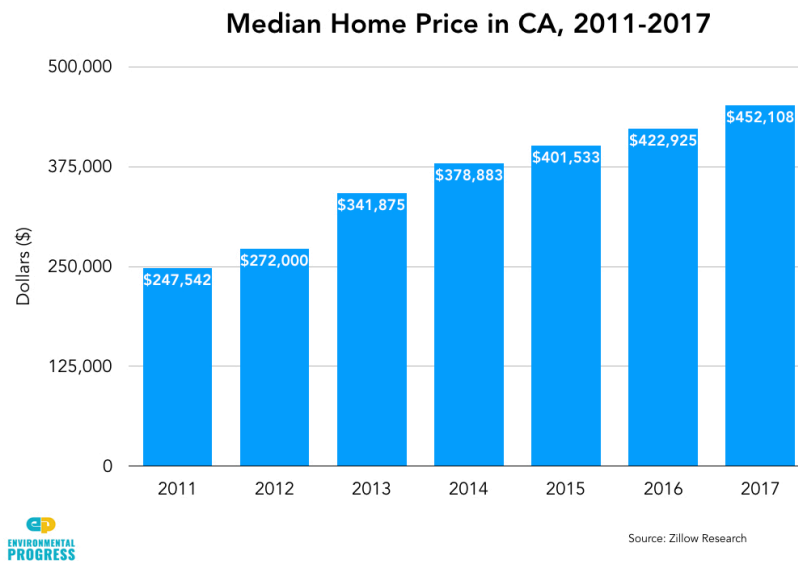
In 2011, newly-elected Governor Jerry Brown and the legislature delivered balanced budgets, and the economy roared back to life. Today, California has an \$8 billion surplus, and experts say that the 2018-19 budget could grow it to [\\$19 billion](#).¹¹ If it were its own nation, California's economy would today be the sixth largest in the world.¹² In light of these successes, voters in 2012 rewarded Brown and the Democrats with a supermajority in the legislature.

California's economic growth was 3.3 percent in 2016 — about double the national average.¹³ The unemployment rate was 4.5 percent, down from 12 percent in 2011. Housing foreclosures have declined 75 percent.^{14,15} Housing construction recovered from its collapse, with new permits from 59,000 to 102,000 housing units per year from 2012 to 2016.¹⁶

To increase funding for schools, Brown campaigned for and won a ballot initiative in 2012 to raise taxes by about \$6 billion annually.¹⁷ Since then, California has funneled more than \$28 billion to schools, increasing per pupil spending by about 25 percent in 2016.¹⁸

In recognition of severe prison overcrowding, Gov. Brown in 2016 campaigned for and passed a ballot initiative that released nonviolent offenders into drug treatment and rehabilitation.¹⁹

Brown and the Democratic supermajority raised the minimum wage to \$10.50 per hour with the goal of \$15 by 2023, which is \$7.75 higher than the national minimum of \$7.25.²⁰



Brown has opposed efforts by the Trump administration to deport immigrant children and declared California a Sanctuary State, a position affirmed by the state's Attorney General and the mayors of San Francisco and other major California cities.^{21,22}

No state has a stronger reputation for environmental protection. In 2013, Brown published an action plan that established a goal of having 1.5 million zero-emission vehicles in California by 2025.²³ In 2015, Brown and the legislature passed a law requiring that California generate half of its power from renewable energy sources by 2030.²⁴

In 2016, Brown and the legislature renewed net-metering policies, allowing homeowners with solar rooftops to sell electricity into the grid. Both laws helped give rise to companies like SolarCity and Tesla, owned by entrepreneur Elon Musk.²⁵

Under cap and trade legislation, California has reduced carbon emissions, as measured by the California Air Resources Board (CARB).²⁶ And by selling pollution allowances, the legislation has resulted in the distribution of \$1.2 billion to finance environmental initiatives, including a high-speed train which is intended to reduce travel time between northern and southern California while promoting urban density and reducing air pollution.²⁷

In September, 2017, Brown signed legislation passed by the legislature to increase the supply of housing.²⁸ The legislation seeks to streamline regulations and increase spending on affordable housing. Its authors say it could result in 70,000 new units.²⁹ And Brown has put on the 2018 ballot another bond that would raise \$4 billion to subsidize affordable housing.

Brown is seeking new infrastructure. After a series of bad droughts, Brown pushed for and won major investments in two water tunnels and road repair. Many view the water tunnel as a win-win compromise between conservationists and farmers and the culmination of the water works overseen by his father, Gov. Pat Brown (1959-1967). And last year the legislature passed a new tax on gasoline, which will raise \$50 billion to pay for road repairs.

As a result, California is today viewed as a model for progressives and Democrats nationally. "Jerry Brown's California now stands like a parallel universe to Donald Trump's America," [wrote Rolling Stone](#), "a land of tolerance, high immigration, tight gun control and world-beating innovation — combining a soaring economy with plummeting greenhouse-gas emissions."³⁰ In *The Nation* magazine Peter Schrag, the former *Sacramento Bee* editorial page editor, wrote, "no place is a more hopeful model for the future than California."³¹

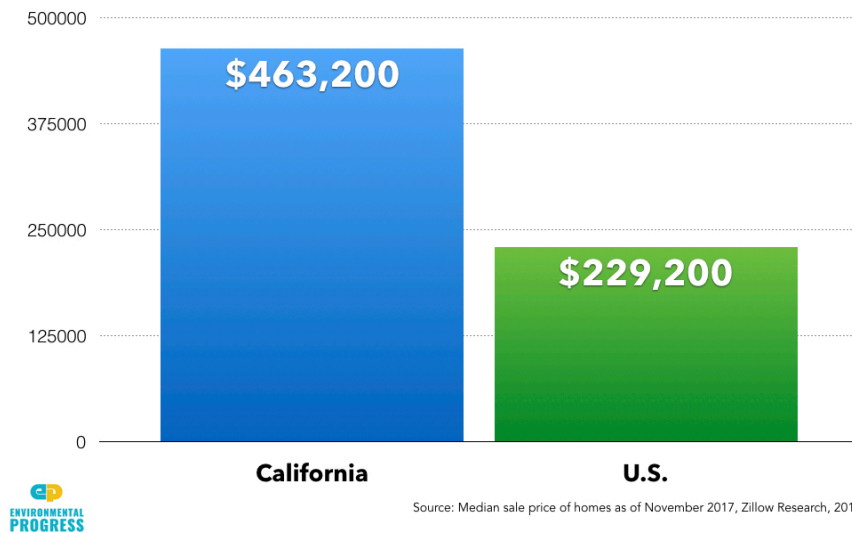
B. The Affordability Crisis

1. Housing

One of the greatest threats to the California Dream is the high cost of housing. Homes are more expensive in California than in every other state except Hawaii. In 1970, a median-valued California home was only 35 percent more expensive than the national

median value³² whereas today homes in California are 2.5 times more expensive.³³ Six of the country's most expensive rental markets are in California.³⁴ And the median sale price of a home in California increased almost twice as much as a median-priced home did nationally.³⁵

A median-priced home in California is twice as expensive as a median-priced home nationally

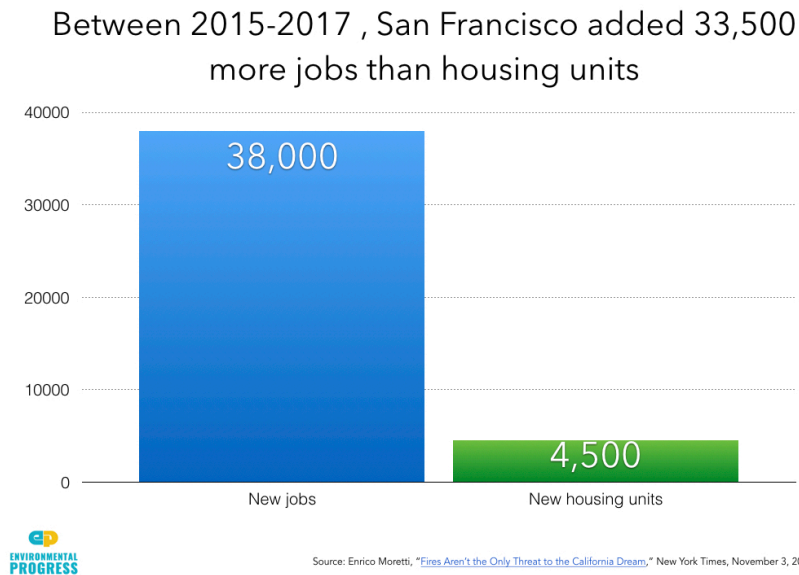


Los Angeles, San Francisco, and San Diego are three of the four most unequal cities in the country.³⁶ Median rents have increased 49 percent in San Francisco and 25 percent in Los Angeles since January 2011.³⁷

The cost of housing is so high that in 2017, 56 percent of all Californians surveyed said they had considered moving and 27 percent said they had considered moving out of state.³⁸ Where 56 percent of Californians could afford a middle-class home in 2012, in the third quarter of 2017, just 28 percent could.³⁹

The young, the poor, and non-whites are disproportionately affected. Homeownership among baby boomers in California is close to the national average while just one out of four Californians between the ages of 25 and 34 own a home.⁴⁰ California has the third-worst state homeownership rate for millennials in all of the United States. And in the U.S. as a whole, the gap between black

and white home ownership is 30 percentage points, which is wider than at any other point since the second world war.⁴¹

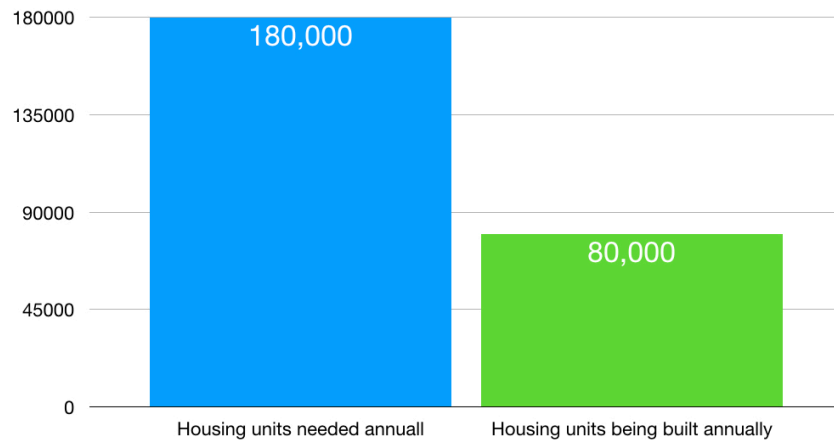


High housing costs mean Californians must spend many more years saving up for a downpayment than other Americans. A single person in Los Angeles who earns the median-income would need to save for 27 years before being able to afford a downpayment on a median-priced home. In San Francisco she or he would need 29 years — nearly three times longer than the national average.⁴²

The unaffordability of housing contributes to rising social inequality. Homeownership has long been, and remains, the primary way that families accumulate wealth over time. Homeowners have a net worth that is 36 to 45 times higher than that of renters, according to the U.S. Federal Reserve.⁴³

In 2016, more than half of California renter households and more than a third of mortgage holders paid over 30 percent of income toward housing,⁴⁴ a share that has historically been viewed as too high to allow sufficient consumption of other basic goods.⁴⁵ In Los Angeles, half of all households spend 30 percent of their income on housing; in Stockton, California, 61 percent do.⁴⁶ In 2016, nearly [30 percent of tenants](#) in California put at least half of their income toward rent and utilities.⁴⁷

California is building 44% of the housing it needs



Source: Legislative Analyst's Office, "California's High Housing Costs: Causes and Consequences," March 17, 2015; Jonathan Woetzel, Jan Mischke, Shannon Pelouquin, and Daniel Weisfeld "Closing California's housing gap: 3.5 million homes by 2025", McKinsey & Company, 2016.

Housing is so expensive that it is reducing economic growth. One study finds that land use restrictions nationally have reduced economic and wage growth by 50 percent over the last 50 years. Without those restrictions, the average American worker would be earning an additional \$7,000 a year in income.⁴⁸

California is no different, as its economy loses [\\$140 billion per year](#) in economic output because of California's high housing prices, according to McKinsey.⁴⁹

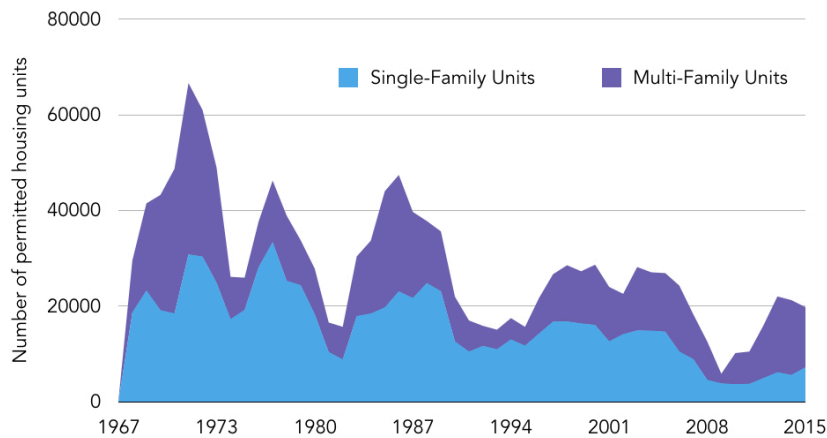
The housing shortage is choking the growth of the high-tech industry in northern California. Between 2015 and 2017, San Francisco added 38,000 new jobs but only 4,500 new housing units.⁵⁰ The situation will become far worse if seven million more people move to California over the next 20 years, as state demographers predict, without an acceleration of homebuilding.⁵¹ And it's not the first time. California experienced a similar problem during the first dot com boom in the late 1990s. Writes Ryan Avent in *The Gated City*,

The forces that repelled workers from Silicon Valley, which was the intellectual heart of the country's tech industry, reduced the potential echoic impact of the tech boom...

reduced national productivity and total compensation in the economy.⁵²

Today, the impact of the housing crisis can be seen in the streets. Some students at the elite University of California, Berkeley live out of their cars.⁵³ Over the last two years, homeless encampments containing hundreds of people have appeared under highways throughout the Bay Area.⁵⁴ In Silicon Valley, 132 people died on the street in 2016 — up from 85 in 2015.⁵⁵ In San Diego, 117 people died in 2016, up from 56 the year before.⁵⁶

Annual Permitted Housing Units in the Bay Area, 1967 - 2015



Source: Vital Signs; Construction Industry Research Board, 1967–2010; California Homebuilding Foundation/Construction Industry Research Board, 2011–2015. As seen in "Plan Bay Area 2040"

Experts agree that the high price of housing in California is due to scarcity from a growing human population and insufficient new construction. The state Legislative Analyst's Office says meeting demand would require increasing new housing construction by more than 100 percent, from 80,000 units per year to 180,000 or more.⁵⁷

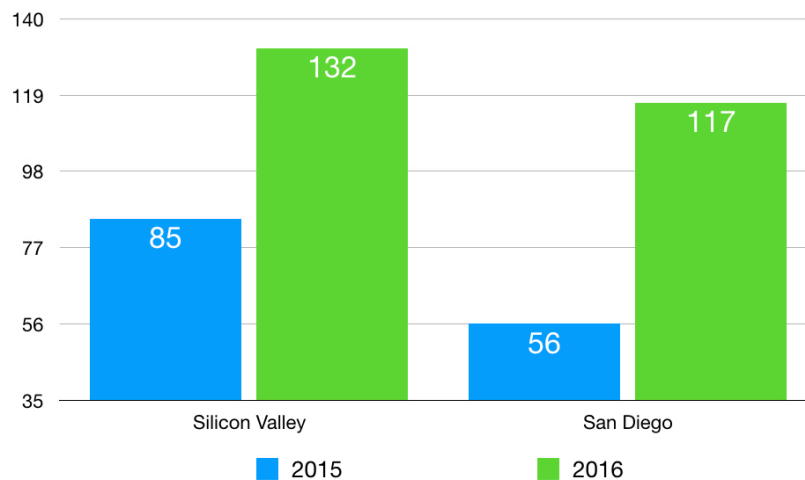
While housing is the main factor behind the high cost of living, California's high sales and income taxes, and unfair property taxes also contribute significantly. California has the highest sales tax in the country at 7.25 percent and highest income tax rate for the top tier earners at 13.3 percent.^{58 59} At the same time, the majority of

tax relief from Proposition 13, the 1978 ballot initiative that restricted property taxes, goes to wealthier households. “About two-thirds of tax relief goes to those with incomes higher than \$80,000,” notes the state’s Legislative Analyst’s office, “with the bulk of that relief going to homeowners with incomes in excess of \$120,000.”⁶⁰

2. Inequality and Poverty

As a result of our high cost of living, California has the highest poverty rate in America, according to the United States Census Bureau’s Supplemental Poverty Measure — a rate higher even than Mississippi.⁶¹ California’s poverty rate is so high that it has remained number one in poverty, despite a net decline in the poor due to their exodus from the state between 2000 and 2015.^{62,63}

California homeless deaths on the street are rising



Sources: Eric Kurhi, “Santa Clara County Report Shows Surge In Homeless Deaths”, The Mercury News, August 6, 2017; Gary Warth, “Candlelight Walk Honors 117 Homeless Deaths In 2017”, San Diego Tribune, November 3, 2017.

Workers in California have higher incomes, earning 11 percent more than the national average,⁶⁴ but that amount is not enough for many workers to make up for home mortgage payments and rents that are 44 percent and 37 percent more, respectively, than the national average. Housing prices in Los Angeles rose [four times faster](#) than incomes between 2000 and 2015.⁶⁵

California's high housing prices are driving high-wage jobs out of the state. For example, in 2014, Toyota started moving its headquarters to Texas [so that its employees could afford housing](#). As one of the world's largest automakers leave the state, the possibility of creating high-wage manufacturing jobs within Toyota's supply chain diminishes.⁶⁶

The Bay Area's slow housing growth is sending good jobs to other parts of the country including Portland, Oregon, Austin, Texas, and Raleigh, North Carolina, notes Liam Dillon of the *Los Angeles Times*. Those cities are building new homes twice as quickly as the Bay Area, making homeownership more affordable.⁶⁷

Meanwhile, electricity, natural gas, and gasoline are all significantly more expensive in California than in other states.⁶⁸ Any policy that increases the cost of basic needs like energy and food is regressive. The poor are disproportionately impacted by higher energy and food prices because they must spend more of their income on them.⁶⁹

Between 2011 and 2017, California's electricity prices rose five times faster than they did nationally.⁷⁰ Today, Californians pay 60 percent more, on average, than the rest of the nation, for resident, commercial and industrial electricity.⁷¹

Between 2016 and 2017, California's electricity prices rose six percent, which is three times faster than the rate of inflation. Electricity prices in the rest of the United States outside California rose two percent, the same as the rate of inflation. The price increases came despite 2017 having the highest output of hydroelectricity — the state's [cheapest](#) source of electricity — since 2011.⁷²

Expensive energy contributes to the decline of manufacturing in California. From 2011 to 2017, California's industrial electricity prices rose 28%, while the average price in the other 49 states fell one percent.⁷³ In 2017, California manufacturers paid 97 percent more than the US average for electricity.⁷⁴

Partly as a consequence, where manufacturing job growth grew 8.7 percent nationally between 2010 and 2017, it only grew 3.9 percent in California.⁷⁵ In 2016, California attracted one-quarter of

the average manufacturing investment as the rest of the United States.⁷⁶

Manufacturers surveyed also said California did a poor job providing tax incentives, credits, and regulatory relief.⁷⁷ As a result, California is losing the valuable scale-ups from R&D (research and development) to manufacturing. The California Manufacturing and Technology Association interviewed 500 manufacturers that had opened a new facility in the US about why they had not chosen California. The report concluded:

California is not a competitive place for a manufacturing company. Costs, regulations, permitting delays, a lack of incentives, high labor costs and a high tax rate among other factors make it very difficult for manufacturers to do business in California.⁷⁸

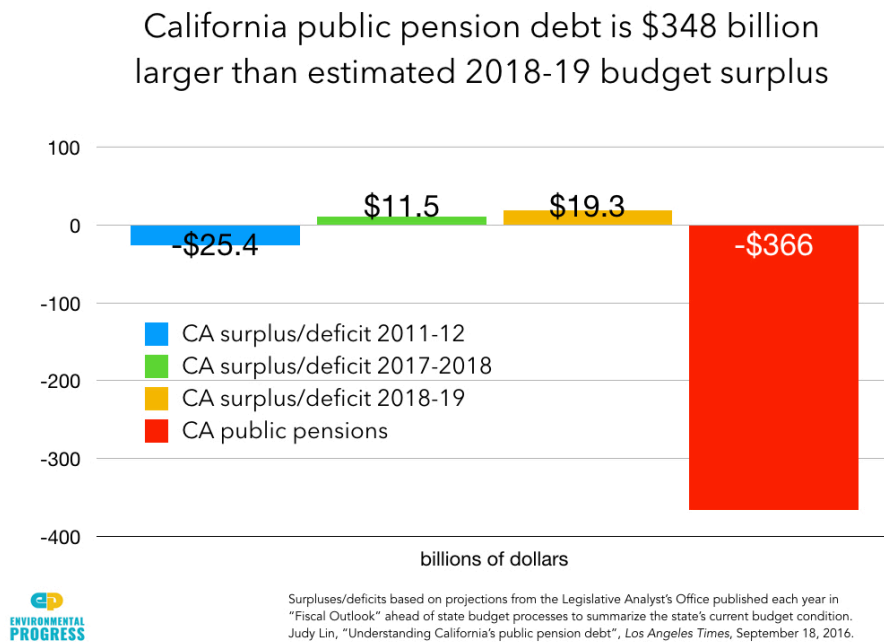
Those high wage manufacturing jobs have been replaced by lower-wage service jobs. The average California worker in manufacturing earns \$96,711 per year in comparison to the average (non-farm) Californian annual wage of \$58,628.⁷⁹

Over the last decade, Los Angeles, the state's current manufacturing center, lost [89,000 manufacturing jobs](#). And where those jobs paid an average of \$52,000 a year, the 92,000 service sector jobs that replaced them paid an average of \$20,000 per year. Silicon Valley lost fewer — 1,200 manufacturing jobs — but these jobs once paid an annual salary of \$120,000 per year.⁸⁰

Even as California has shed high-wage manufacturing jobs, it has retained low-wage agricultural jobs. California is home to one-third to one-half of the nation's farm workers, between 500,000 and 800,000 people, three-quarters of whom are undocumented.⁸¹ They are often denied their right to a minimum wage, overtime pay, and mandatory breaks, despite working in one of the nation's most dangerous industries, with a workplace death rate seven times higher than the private sector average.⁸² Eighty percent of farmworker women report sexual harassment including rape in the fields.⁸³

The combination of these forces in California results in some of the nation's highest levels of inequality in "well-being," an aggregate

quantitative measure that includes “a long and healthy life, access to knowledge, and a decent standard of living.” California is the most unequal state among large states.^{84,85} California has both the top-ranked (Silicon Valley) and bottom-ranked (Central Valley) congressional districts in the country in terms of well-being.⁸⁶ Only six of the nation’s 20 bottom-ranked districts are outside of the South, and half of those are in California.⁸⁷



Nowhere is the dark side of California’s unequal economy more on display than in the opioid epidemic. In the poorest corners of California over 4,600 people died from overdoses in 2016, the second-highest number of deaths recorded of any state in that year,⁸⁸ mostly due to higher supplies of the drugs.⁸⁹ Meanwhile, in San Francisco, drug company McKesson’s CEO personally earned \$700 million over the last decade as he turned a blind eye to the massive diversion of his company’s opiate drugs to the black market.⁹⁰

California’s economy is slowing, with serious implications for the state’s budget. California’s rate of economic growth during the first two quarters of 2017 was [below the national average](#), ranking 35th

in the nation.⁹¹ If California goes into recession this year, there will be a [\\$55 billion shortfall](#) over the next three years.⁹²

That amount is dwarfed by the much larger [\\$366 billion debt](#) owed in pension and health care to public employees. That debt is “off-the-books” — not included in the Governor’s annual budget request.⁹³ That amount is growing because California is only paying 80 percent of future pension obligations. As such, the state pension fund alone is [35 percent short](#) of the amount needed to pay current and future pensions.⁹⁴

And the \$366 billion debt may be a significant underestimate since it is based on high (7.5 percent) expected returns on investments. Stanford University’s Institute for Economic Policy Research estimates that if earning assumptions were at four percent, California’s debt would balloon to nearly \$1 trillion.⁹⁵

C. Education

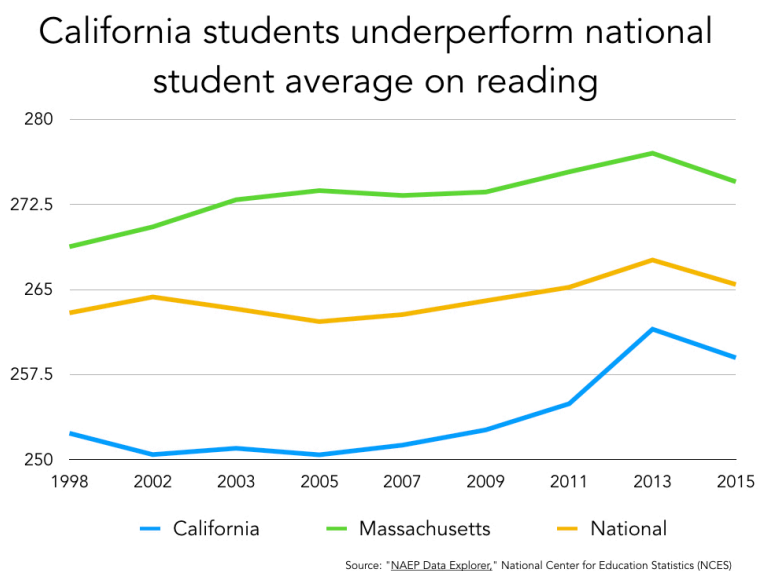
California is uniquely unequal when it comes to education. The state is home to both the two highest-ranked school districts and five of the 10 bottom-ranked districts. The two highest-ranking are affluent coastal districts, District 33 (which contains Malibu and part of Los Angeles’ Westside) and District 18 (Silicon Valley). The lowest-ranking are low-income inner-city and Central Valley districts. ⁹⁶

California has sought to address this problem by increasing funding for schools. In 1988, California voters passed proposition 98, which mandates that a minimum of 40 percent of the state budget go to schools. In 2012, voters passed Proposition 30, which has to date raised \$28 billion for schools, accounting for 12.5 percent, on average, of school district revenue.⁹⁷ In 2016, Proposition 55 extended the tax rates from Proposition 30 until 2030.⁹⁸

Despite increased funding, there has been little change in the overall performance of students in California based on the standardized tests that measure knowledge of the Common Core standards.⁹⁹ This stagnation has resulted in California falling behind. From 2012 to 2016, California went from 33rd to 42nd for

overall grades and scores nationwide and 35th to 38th in K-12 achievement, according to Education Week.¹⁰⁰

In terms of education, the racial divide is wider in California than in other states, with the state ranked last for education equality by race.¹⁰¹ African American students saw their eighth grade performance decline slightly,¹⁰² while Latino students saw their eighth grade performance overall decline to [second-to-worst](#) in the U.S.¹⁰³ Today, fewer than 40 percent of non-white and non-Asian students meet state educational standards. Students with special needs and disabilities also fell below the 40 percent threshold.¹⁰⁴

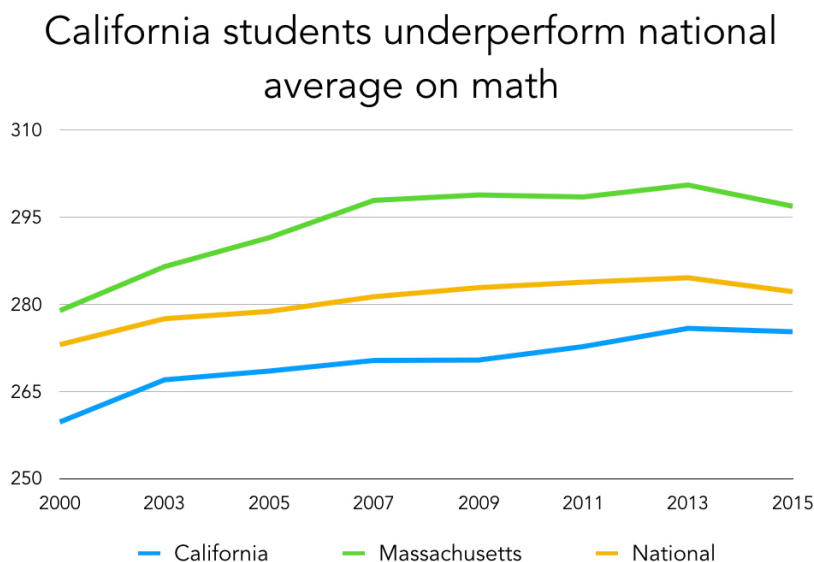


California schools are failing to prepare high school graduates for college. About 40 percent of students who enroll in the California State University system are required to take remedial English and math.¹⁰⁵ If trends continue, California companies will lack 1.1 million college-educated workers by 2030.¹⁰⁶

In the California State University system, 21 of the 23 campuses lack capacity in one or more programs to enroll all the applicants who are qualified. Six of these campuses are fully impacted, meaning all undergraduate majors have reached enrollment capacity.¹⁰⁷

Eighty-five percent of Californian parents want their child to earn a four-year college degree but [only 30 percent of California's ninth graders will](#).^{108,109} And in 50 years, the percentage of California's high school graduates attending a four-year college has not changed, even though a higher percentage are qualified to do so.¹¹⁰

Meanwhile, California's spending on higher education declined from 18 percent to 12 percent over the last 40 years.¹¹¹ The result is the Millennial generation — already burdened with higher housing prices and stagnating wages — must take on a large debt incurred from higher education.



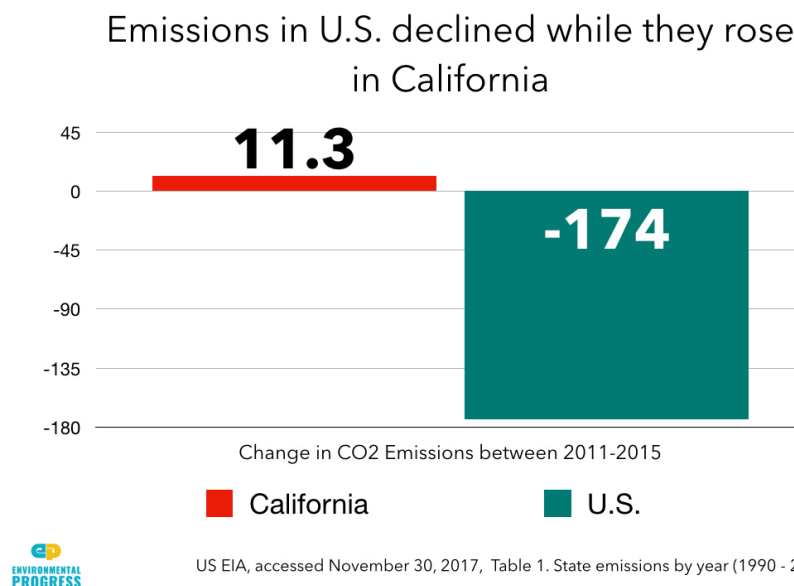
Source: "NAEP Data Explorer," National Center for Education Statistics (NCES)

D. Environment

Against its reputation as an environmental leader, California has made little progress on air pollution or carbon emissions over the last decade. California continues to have seven of the 10 most polluted metropolitan areas in the United States.¹¹² Los Angeles-Long Beach, Bakersfield, and Fresno-Madera were the regions with the worst smog levels in the country in 2017.¹¹³ Today, over 90 percent of California residents live in counties with air that is classified as "unhealthy".¹¹⁴

Carbon emissions rose 3.2 percent in California between 2011 and 2015 even as they declined 3.7 percent in the remaining 49 states.¹¹⁵ California's in-state emissions from electricity generation rose from 33 to 44 million metric tonnes of carbon emissions between 2011 and 2015.¹¹⁶

In 2016, emissions from electricity produced within California decreased by 19 percent, but two-thirds of that decline came from increased production from the state's hydro-electric dams due to it being a rainier year, and thus had nothing to do with the state's energy policies. Approximately a third of the decline came from increased solar and wind.¹¹⁷



And the dramatically fluctuating amounts of electricity from the state's dams underscore why even our most reliable form of renewable energy cannot be relied upon to reduce emissions year after year. The state is not building any new dams, and the kind of drought California suffered from 2012 to 2017 may become more frequent as a consequence of climate change.¹¹⁸

California's carbon cap has never been strict enough to restrict pollution emissions and has been used instead as a way for Gov. Brown to raise money for favored projects like the train he is seeking to build to connect northern and southern California. Some blame the Great Recession which resulted in slower-than-

expected economic growth and low prices for carbon credits. That made it easier for companies to, on whole, pay for the credits rather than reduce their emissions.¹¹⁹

Making the cap more stringent would likely have little impact on emissions, say the state's leading energy economists. Two University of California, Berkeley economists concluded that "it is only a small oversimplification to see our cap and trade program as more like a progressive tax" — except for the fact that consumption taxes, including for energy are, as noted above, regressive, not progressive.¹²⁰

Cap and trade systems have historically depended on significant technological change to allow for emissions reductions. The 1990 amendment to the Clean Air Act included a national cap and trade program to reduce sulfur emissions. Emissions declined at a low cost. But the largest drivers in declining emissions were the connectivity of trains to take coal from lower-sulfur coal deposits in Wyoming and other western states, and lower-than-expected costs of smokestack scrubbers.¹²¹

In the U.S. over the last decade, electricity nationally, as well as the electricity exported to California from other states, produced lower emissions thanks to the switch from coal to cheaper (and cleaner) natural gas.¹²² Had national carbon cap and trade legislation passed in 2010, advocates of cap and trade would likely have also credited cap and trade system with that decline. What in fact created abundant natural gas was the combination of US government-supported technological innovations in fracking, horizontal drilling, and underground mapping.¹²³

More natural gas electricity generation from replacing Diablo Canyon, the state's last nuclear plant scheduled to be closed in 2025, could increase deaths from pipeline explosions and air pollution.¹²⁴ Natural gas is far more dangerous than uranium, the fuel used in nuclear plants. In a large review of the evidence compiled for the British medical journal *Lancet*, scientists found that nuclear power is the safest way to make reliable electricity. Natural gas accidents kill a full order of magnitude more members of the public than nuclear accidents. The same study found that pollution from natural gas kills 54 times more and injures 136 times

more people than from nuclear.¹²⁵ In a study for the journal *Environmental Science and Technology*, climate scientist James Hansen and Pushker Kharecha in 2013 calculated that nuclear energy has prevented 1.8 million deaths since 1971.¹²⁶

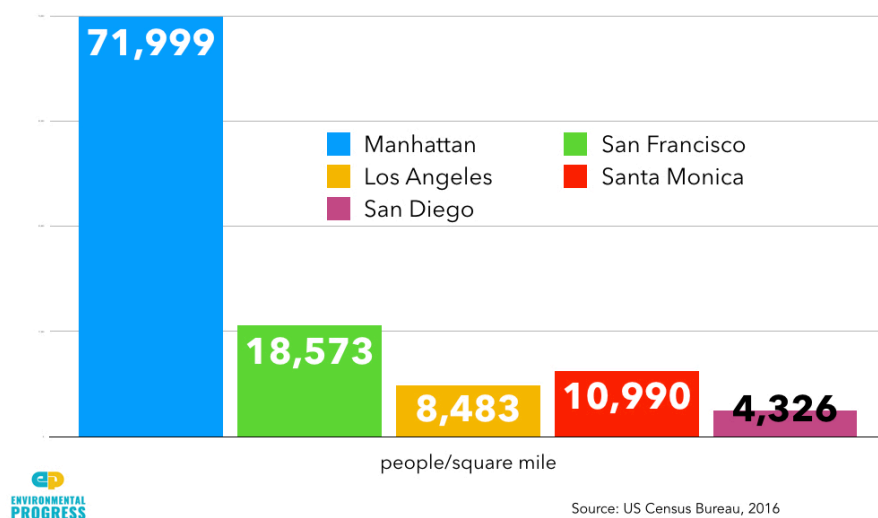
Section Two: Why the Dream is in Danger

A. Why Housing is Expensive

1. Scarcity and Subsidies

There is plenty of land physically available in California to build new homes, both in the cities and the suburbs. While California is the most populous state, it is also the third largest state geographically, after Alaska and Texas. Recently, McKinsey & Co. conducted a detailed mapping of housing potential in California and found large areas of land available even within desirable coastal cities, including San Francisco.¹²⁷

Manhattan has four times more people per square mile than San Francisco



The population density of California's cities is relatively low compared to other states. Manhattan is nearly four times more population-dense than San Francisco.¹²⁸ Even Southern California is relatively population-diffuse, with just 8,483, 10,990, and 4,326 people/mile in Los Angeles, Santa Monica, and San Diego¹²⁹ respectively, compared to 28,210 people per square mile in New York City.

Last September, Gov. Brown signed new housing legislation to raise \$250 million per year to subsidize housing. But at an average subsidy of \$137,000 per affordable unit¹³⁰, that \$250 million would be enough to subsidize just 1,824 units in total — about 92,000 short of what is needed annually.¹³¹

At \$137,000 per unit, it would cost \$69 billion to subsidize the building of the minimum of 500,000 additional housing units California needs to build over a three year period to meet demand. To put that amount of money in context, California's total budget for 2017-2018 is \$183 billion.¹³² The \$69 billion would require a 37 percent increase in the state's total budget, or \$5,113 more in taxes for every Californian family.¹³³

Gov. Brown has emphasized that California's housing problem is mostly unsolvable because it is caused by forces outside of California's control. "The overwhelming capitalist flow of money and people is what it is," Governor Brown said of the housing crisis. "Everybody moves into San Francisco, New York, London, Beijing, Tokyo. Drives up the prices. Can we control that? Only within limits."¹³⁴

Global forces are, to be sure, at work. Manufacturing as a share of the economy and workforce has declined nationally and globally, not just in California.¹³⁵ Income inequality has risen nationally, with rising demand for skilled labor one of the main reasons.¹³⁶ And housing wealth has contributed significantly to overall wealth inequality almost everywhere.¹³⁷

But global forces can't explain why California has the highest rates of racial and generational inequality within the United States. Other states are allowing the homebuilding that California won't allow and attracting manufacturers. What some may claim are unintended consequences of the global economy are, in reality, a consequence of the state's exclusionary policies.

2. Exclusionary Housing Policies

One of the main obstacles to more housing is that many communities in California are not zoned to allow more dense housing, and local communities can organize politically to stop homes that are legal for a zoned area. Local governments are currently able to reject new housing even when it complies with the rules.¹³⁸

Some argue that exclusionary zoning is a strategy by the more educated and affluent to protect their privilege. The Brookings Institution's Richard Reeves, in his recent book *Dream Hoarders*, argued that the wealthiest use exclusionary zoning laws and schooling, to pass on to their children their wealth and status, thereby reducing social mobility and resulting in "a less competitive economy as well as a less open society." Reeves calls this "opportunity hoarding."¹³⁹

Over 80 percent of all lawsuits filed under the state's 1970 California Environmental Quality Act (CEQA, commonly pronounced "see kwa") are filed against urban "infill" housing projects. In Los Angeles and the San Francisco Bay Area, 98 percent and 100 percent, respectively, of all CEQA lawsuits targeted infill development.¹⁴⁰

Exclusionary housing policies didn't come to an end, researchers argue, they simply took new form. For about 40 years from 1930 to 1970, black families were channeled into renting rooms and denied loans, whereas white families were encouraged to buy homes. After that, Richard Rothstein explains, "it was not primarily discrimination (although this still contributed) that kept African Americans out of most white suburbs... it was primarily unaffordability."¹⁴¹

Environmentalism is used to justify *de facto* racial segregation in California's housing. CEQA lawsuits are a major reason for longer delays and higher costs of new housing. "The core legal structure of CEQA," notes housing attorney Jennifer Hernandez, "protects the existing characteristics of those neighborhoods and thus perpetuates land use practices founded in race and class discrimination."¹⁴²

Racial segregation in the guise of environmentalism is on stark display in Marin County just north of San Francisco, where 85 percent of the county is off-limits to new housing.¹⁴³ Marin has the state's oldest, whitest, and richest population. In 2009, the federal Department of Housing and Urban Development found that the county's housing policies contributed to the segregation of blacks and Latinos to just a few neighborhoods.¹⁴⁴ New research finds that Marin has larger inequities between racial groups than any other county in California.¹⁴⁵

One-quarter of all CEQA lawsuits are aimed at stopping new housing. CEQA allows multiple parties to sue anonymously after work on a project has been started and even completed.¹⁴⁶ "And once a project is approved, it faces an endless series of appeals and lawsuits that can add years of delay," write economists Chang-Tai Hsieh and Enrico Moretti. They continue:

Appeals are remarkably easy and affordable to file and can be done anonymously. This basically gives every neighbor a veto over every new project, regardless of how desirable the project might be. It's as if BlackBerry had veto power over whether Apple should be allowed to sell a new iPhone.¹⁴⁷

Most CEQA lawsuits are filed against projects in urban areas, and only 13 percent are filed by actual environmental groups. Over half of CEQA lawsuits are filed in San Francisco and Los Angeles urban regions. Many of the rest are filed by businesses seeking to undermine competitors, and by labor unions — particularly mechanical, electrical, and plumbing unions, known as the MEP Trade Unions — seeking to stop and delay projects that do not agree to "project labor agreements" that require union labor.¹⁴⁸

The MEP unions, which represent an older, wealthier, and whiter workforce than most unions, have blocked CEQA reform. Writes housing advocate Hernandez:

Even projects that are required by law, or agree to pay, the "prevailing wages" established by a state agency (which are typically just under three times higher than local wages for comparable work), find themselves targeted with CEQA

lawsuits and lawsuit threats by union locals that demand that jobs go to their members — payments of prevailing wages alone is not sufficient.¹⁴⁹

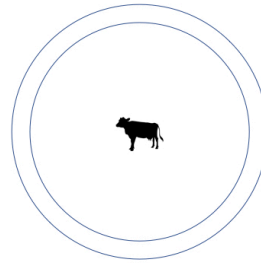
3. Ranching Over Homes

As he enters his eighth consecutive year in office, and 16th year as governor, Gov. Brown is overseeing a Democratic legislature and a booming economy. In 2012, California voters gave Democrats a “supermajority” in the legislature, which allows them to pass legislation without the support of any Republican. Brown is today one of the most powerful governors in the nation, and in all of California’s history.¹⁵⁰

Pasture beef requires 14 - 19 times more
land than industrial beef



Industrial Beef Land Requirements



Pasture Beef Land Requirements



Source: Durk Nijdam, Trudy Rood & Henk Westhoek, “The price of protein: Review of land use and carbon footprints from life cycle assessments of animal food products and their substitutes,” Food Policy, 2012.

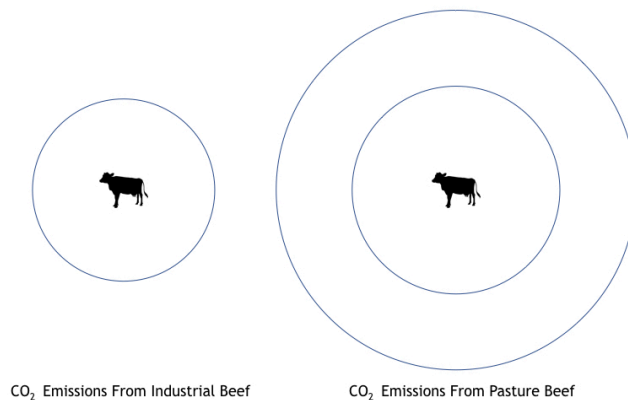
And yet, Gov. Brown has said he’s helpless to make even the smallest of changes to CEQA. “You can’t change CEQA,” he said recently. “The unions won’t let you because they use it as a hammer to get project labor agreements. The environmentalists like it because it’s the people’s document that you have to disclose all the impacts.”¹⁵¹

However, it is difficult to believe that Brown, who is planning to retire to his own ranch next year, is taking marching orders from his allies, the Sierra Club and the Natural Resources Defense Council (NRDC), which oppose reforms to CEQA. While they along with labor unions are indeed a main obstacle to reforming CEQA in

Sacramento,¹⁵² a powerful governor like Brown could easily overcome their opposition in the face of today's housing crisis, given widespread (65 percent) public support for more housing even in one's own neighborhood.¹⁵³

These groups sometimes work with conservation groups such as the Greenbelt Alliance to not only restrict new housing in cities but also in suburbs. They have been remarkably successful in preventing the conversion of agricultural land, contributing to the scarcity of new housing. Between 1997 and 2002, 342,000 acres were converted from farming to housing in California. Between 2007 and 2012, that amount had declined by more than half.¹⁵⁴

Pasture beef generates 30% to 290% more carbon emissions than industrial beef



Source: Dirk Nijdam, Trudy Rood & Henk Westhoek, "The price of protein: Review of land use and carbon footprints from life cycle assessments of animal food products and their substitutes," Food Policy, 2012.

Environmental groups are greenwashing not only exclusionary housing policies but also cattle ranching.¹⁵⁵ Pasture beef requires 14 to 19 times more land and generates 30 to 290 percent more carbon emissions per kilogram than industrial beef, according to a review of 15 studies.¹⁵⁶ Cattle ranching is also preventing the regeneration of California's oak forests.¹⁵⁷ Meanwhile, a growing body of scientific research is documenting the high and growing level of biodiversity being achieved in cities and in suburbs. Last year a team of ecologists wrote:

For many, urban areas are sometimes viewed as concrete jungles with depauperate fauna and flora dominated by nonnatives and homogenous taxa across regions. Although such views are understandable urban areas house a great deal of species both native and nonnative to the surrounding region (Aronson et al. 2014, Ives et al. 2016, Lepczyk et al. 2017). In fact, urban areas can support endemic native species and others of conservation concern both at regional and global scales.¹⁵⁸

Finally, there is the simple matter of fairness. Five times more of California's land is used for pasture (17 percent) and farming (8 percent) than for the cities and suburbs that house its people.¹⁵⁹ California is effectively saying a single sector (farming and ranching) of the economy that generates one percent of the state's GDP deserves five times more of California's land than the sectors of the economy that generate the other 99 percent.¹⁶⁰

B. Why Schools are Underperforming

California's unusually high cost of living, its large non-English-speaking population, and its high poverty rate make the work of school administrators and teachers especially difficult. Of the six million children in California's K-12 schools, about 22 percent are English learners, the highest percentage in the country, and over half are from low-income families.¹⁶¹ Meanwhile, just 17 percent of California's teachers can afford a median-priced home.¹⁶²

California allocated approximately 30 percent of its budget towards K-12 education in 2016¹⁶³ and ranked 16th highest for its share of state expenditures in the U.S. by the National Association of State Budget Officers.¹⁶⁴ But when one accounts for the high cost of living, California actually spends the least per student of all but four other states.¹⁶⁵

The impact of California's relatively small investment in its schools can be seen in staffing levels. The state has the fourth-worst student-to-teacher ratio among the fifty states at 22.5-to-1, compared to the national average of 15.9-to-1, as of 2016.¹⁶⁶

The problems of California's schools are in many aspects extreme versions of the problems affecting schools in other states. The

student achievement gap between rich and poor has grown significantly at a national level, not just in California. Stanford University Professor Sean Reardon discovered that the gap in student performance between high- and low-income families [grew 30 to 40 percent](#) between 1986 and 2001, and has been growing since 1961.¹⁶⁷

The achievement gap between children in the 90th vs 10th percentiles of family income levels is today nearly twice as large as the one between black and white children, finds Reardon. Fifty years ago, the situation was reversed: the black-white student achievement divide was one-and-a-half times as large as the 90-10 income divide.¹⁶⁸

Wealthier parents have two to three times more time to spend with their young children than less affluent parents, *New York Times* columnist David Brooks noted recently. Affluent parent spending on education increased 300 percent since 1996, while spending on education among the rest of the public remained largely unchanged. “Over the past generation,” writes Brooks, “members of the college-educated class have become amazingly good at making sure their children retain their privileged status. They have also become devastatingly good at making sure the children of other classes have limited chances to join their ranks.”¹⁶⁹

Education researchers have long recognized that [most of what determines student performance are factors](#) outside the classroom, and thus outside the control of principals and teachers. This research finds that the achievement gap between Latinos and African Americans on the one side and whites and Asian Americans on the other already exists by the time students start kindergarten.¹⁷⁰

This situation can be seen in one of two ways. The good news about schools is that they do not appear to be increasing the income-achievement gap. The bad news about schools is that they aren’t decreasing the income-achievement gap either. Stanford’s Reardon notes that “the income achievement gap is large when children enter kindergarten and does not appear to grow (or narrow) appreciably as children progress through school.”¹⁷¹

The dominant factor for the rising income-achievement gap is “increasing parental investment in children's cognitive development.”¹⁷² This increased parental investment, Reardon notes, is not mediated by an increase or decrease in parental education. That’s because

the relationship between parental education and children's achievement has remained relatively stable during the last fifty years, whereas the relationship between income and achievement has grown sharply. Family income is now nearly as strong as parental education in predicting children's achievement.¹⁷³

And research finds that more affluent parents have more time, energy, and willingness to invest in “parental involvement” than low-income parents.¹⁷⁴

One response has been government and philanthropic efforts to improve parenting, but [they haven’t worked](#) — even for the minority of parents interested in being taught how to parent.¹⁷⁵

This fact should not lead us to throw up our hands at improving education for the simple reason that we also have abundant evidence that the quality of the teacher can matter significantly to student performance. [Teacher](#) quality can be measured over the long-term for their influence on future wages and well-being.¹⁷⁶

Increasing spending *alone*, without accompanying reforms, was insufficient to improve student performance in California, and there was never much in the way of good evidence showing that increasing funding would result in better student performance. The [lack of a relationship](#) between resources and student performance holds true both within and between developed (OECD) nations.¹⁷⁷

The nearly decade-long experiment with public school reform in Washington, D.C. shows that student performance can be improved significantly by rewarding teachers for performance and replacing underperforming teachers.¹⁷⁸ Dismissal threats for underperforming teachers led to both an increase in voluntary attrition of these teachers and an improvement in the performance of the previously low-performing teachers. And the financial incentives associated with the program further improved the

performance of high-performing teachers within the school district.¹⁷⁹

However, even as test scores were rising in those districts, a growing body of research was finding that standardized testing only benefits a narrow band of students: those “on the bubble” between meeting the standard or not.¹⁸⁰ The researchers refer to this as a consequence of “educational triage.” Teachers under pressure to improve student performance on standardized tests often focused on the students closest to achieving proficiency — the students in the middle — and ignored both the high-achieving and low-achieving students.¹⁸¹

Relatedly, tests hadn’t measured whether individual students were improving their performance, only what percentage of students were meeting a standard. That left teachers feeling that they were being held accountable for things outside of their control, namely the preparedness of the students assigned to them.¹⁸²

To address these problems and others, in 2015 Congress passed and President Barack Obama signed the Every Student Succeeds Act (ESSA) to change how student performance is measured. ESSA established growth in student achievement as the guiding measure, not percentage of students meeting the standard, and rescinded the requirement that educators be evaluated.¹⁸³

And yet none of these reforms address the fact that teachers and many students simply lack the time they need to teach and learn the material due to the length of the school day and school year. For nearly 25 years, education experts have recognized this problem. In 1994, the National Education Commission on Time and Learning published a report, “Prisoners of Time,” that warned that core academic instruction for high schoolers had been reduced to just three hours per day. It urged core academic instruction time be increased to at least five and a half hours — nearly a doubling.¹⁸⁴

Student performance improves with increased instructional time. Some of the strongest evidence comes from the fact that the achievement gap between rich and poor students widens not during the school year [but rather](#) over [summer vacation](#).^{185,186} “The effect of summer break was more detrimental for math than for

reading and most detrimental for math computation and spelling," a major review found. "Also, middle-class students appeared to gain on grade-level equivalent reading recognition tests over summer while lower-class students lost on them."¹⁸⁷

Too little instruction time results in students ill-prepared for college or high-skilled work of any kind — the worst of all worlds. Educational researchers have long criticized the "farm schedule" of the current school year and the "factory model" of instruction, where students are all treated the same. The factory model was thought of as an efficient way to instruct children within the short school day.¹⁸⁸ Today it's clear that the outmoded farm schedule and factory model conspire to thwart the needs of most students while leaving teachers and parents frustrated and unhappy.

California has shown little interest in these reforms, and Gov. Brown has largely given up on the idea that California's schools can be fixed. "If the parent screwed up things," Gov. Brown said in 2016, "and if the principal's no good, if the principal can't lead, if the superintendent isn't very good, if the local school board isn't so good, what makes you think that the Legislature can fix it."¹⁸⁹ Lacking confidence that schools can be fixed, Brown's policy has been to devolve ever-more control to local school districts, no matter how poorly they are performing.

C. Why Energy Prices & Pollution Are Rising

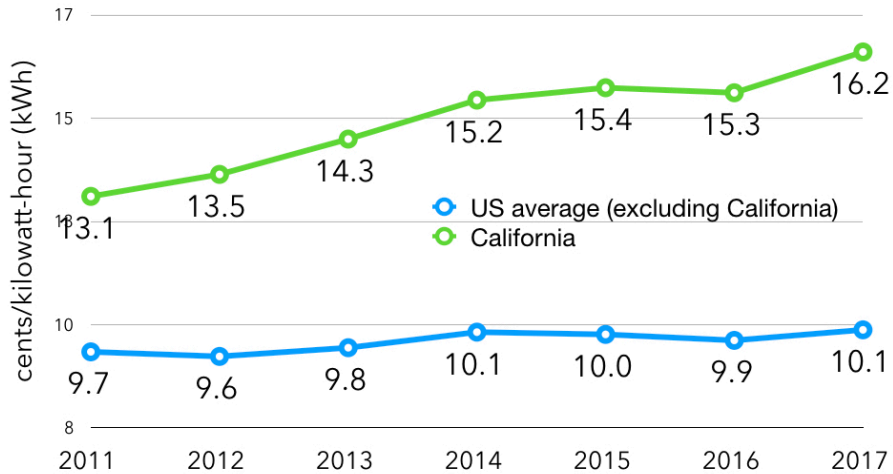
1. Electricity

As noted above, between 2011 and 2017, California's electricity prices rose five times faster than they did nationally.¹⁹⁰ Today, Californians pay 60 percent more, on average, than the rest of the nation, for resident, commercial and industrial electricity.¹⁹¹

Economists agree that "the dominant policy driver in the electricity sector [in California] has unquestionably been a focus on developing renewable sources of electricity generation."¹⁹² California's Renewable Portfolio Standard (RPS) requires the states electric utilities to get a growing supply of electricity from renewable sources. By 2020, the state must generate 33 percent of

its electricity from renewables; by 2030, it must generate 50 percent.

Electricity prices in California rose 5x more than in rest of U.S.

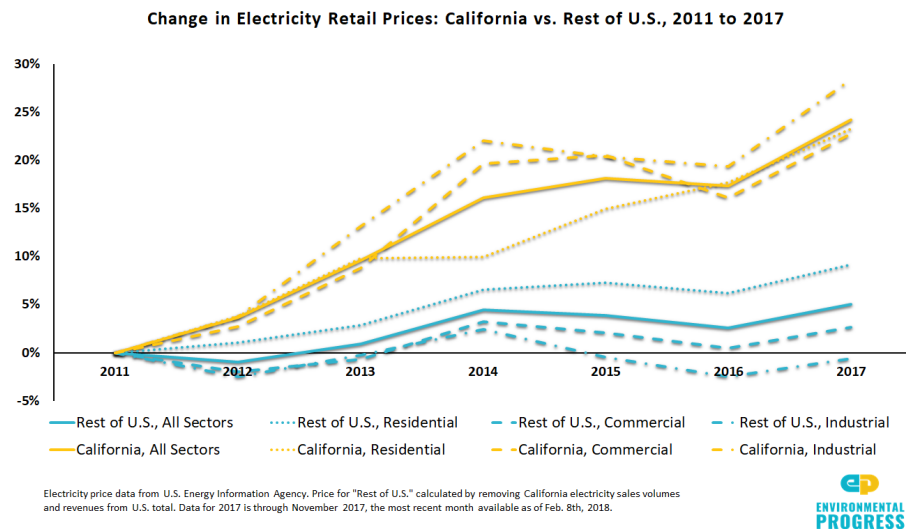


Source: US Energy Information Administration, 2017.

High levels of renewable energy penetration make electricity expensive around the world, not just in California. As Germany deployed high levels of renewables over the last 10 years it saw its electricity prices rise 34 percent.¹⁹³ Today, German electricity costs twice as much as that in neighboring France.¹⁹⁴ And a strong correlation exists between wind and solar penetration and household electricity prices in 28 Organization for Economic Co-operation and Development nations (OECD).¹⁹⁵

California's RPS increases electricity costs in part by requiring the purchase of renewables even when they cannot be relied on to power the grid. The RPS has required California's utilities to acquire new renewable energy regardless of the inability of the new power to efficiently support the needs of consumers. Utilities then pass these higher costs on to consumers.¹⁹⁶ As a result, California today has a large amount of excess electricity generating capacity. California's power plants will be capable of producing 21 percent more electricity than maximum demand by 2020, according to an analysis by the Los Angeles Times — an amount that doesn't consider the significant quantities of electricity produced from the state's solar panels.¹⁹⁷ An additional driver of higher costs from adding solar and wind has been the costs of new transmission

lines.¹⁹⁸ The RPS has required California's utilities to acquire new renewable energy regardless of the inability of the new power to efficiently support the needs of consumers. Utilities then pass these higher costs on to consumers.¹⁹⁹

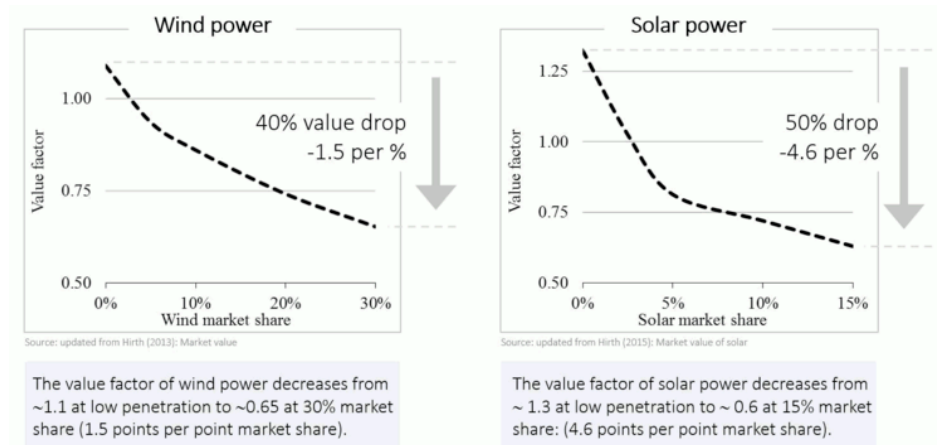


There is little prospect for electricity costs to come down for consumers where solar and wind are being deployed in significant quantities. The reason is their intermittency. Research by German economist Lion Hirth finds that the economic value of intermittent energy sources declines significantly as they become a larger part of the electricity supply. For example, the value of wind to the European grid drops 40 percent once it becomes 30 percent of electricity, Hirth finds, and the value of solar drops by half when it gets to just 15 percent.²⁰⁰

As wind and solar capacity climb, the returns of usable power diminish because of increasing curtailment during surges that the grid cannot absorb. More and more intermittent capacity has to be pushed onto the grid to get less and less additional renewable electricity. The dynamic of soaring overcapacity and falling prices is the inevitable result of the fundamental inability of intermittent wind and solar generators to efficiently match supply to demand.

The burden of higher cost electricity and benefits of renewable energy subsidies fall unevenly on Californians. Between 2007 and 2014, the 40 percent of California households with the highest

incomes received three times more in solar subsidies (between \$10,000 and \$20,000 per household) than the 40 percent of Californians with the lowest incomes. And California households with over \$100,000 in annual income benefitted from energy efficiency subsidies at twice the rate of households whose income was under \$50,000.²⁰¹



Another reason for California's high electricity prices is the closure of San Onofre Nuclear Generating Station (SONGS). University of California, Berkeley economists found SONGS was replaced by natural gas that resulted in higher electricity prices and opportunities for market manipulation by gas providers. "In the twelve months following the closure, natural gas generation costs increased by \$350 million," the economists noted. "The closure also created binding transmission constraints, causing short-run inefficiencies and potentially making it more profitable for certain plants to act non-competitively."²⁰²

More energy efficiency is unlikely to lower overall electricity demand. California's per capita electricity consumption has been relatively flat since 1975, hovering around 6,900 kWh per person, with no pattern of increase or decline during this period.²⁰³ During this time, California has had in place aggressive efficiency measures.

California's levels of *per capita* electricity consumption are lower than the national average for reasons that have mostly to do with the state's mild climate (requiring less energy for heating and

cooling) de-industrialization, changing demographics, and very little to do with the state's energy efficiency policies.²⁰⁴

And there is a large body of evidence that additional energy efficiency measures will raise electricity rates, not lower them. On July 15, 2013, California Public Utilities Commission (CPUC) co-hosted a workshop with the California Energy Commission (CEC) to discuss how to replace the power lost after the closure of SONGS. At the meeting, a representative of Southern California Edison told commissioners that more energy efficiency projects would increase electricity costs.²⁰⁵ Additional evidence comes from a rigorous study conducted by a team of economists from the University of California, Berkeley and the University of Chicago. They found that a large federally-funded home weatherization cost twice as much as the value of the electricity it saved.²⁰⁶

2. Gasoline

California consumers have long paid more for gasoline than other Americans due to higher taxes and fees, but since 2015 have been paying more for reasons that appear to be related to price manipulation by refineries.

Between February 2015 and October 2017, Californians have paid an excess \$12 billion — which is about \$1,200 for a family of four. In September 2017, California's Petroleum Market Advisory Committee published a report concluding that they lacked the resources and access to properly investigate the reasons for the higher prices.²⁰⁷

Over the last two decades, various government investigations into the gasoline price manipulation have been undertaken and then dropped, the most recent in 2016.²⁰⁸ In 2017, the liberal research group, Consumer Watchdog, found that "lack of accurate, real-time information about imports and exports created unnecessary volatility in gasoline prices. Refiners hid imports and exports from view of the market in order to command higher prices."²⁰⁹

Four oil refiners control 80% of the state's gasoline production and the inside information they know about each others' supplies and prices allow them to rig the market to keep gas supplies low, prices high, and drive out

competition... oil refiners already have insider information that is denied smaller traders, the public, antitrust regulators and station owners, who have the potential to take steps to drive down prices in times of tight supply or when refiners make anti-competitive moves.²¹⁰

3. Carbon Emissions

Carbon emissions rose between 2011 and 2015 for two main reasons: recovering economic growth following the Great Recession of 2008 and the replacement of the San Onofre Nuclear Generating Station (SONGS) with natural gas.²¹¹ In Applied Economics, two UC-Berkeley professors [concluded](#): "Using a novel econometric approach, we show that the lost generation from SONGS was met largely by increased in-state natural gas generation."²¹²

California's power sector emissions are two-and-a-half times higher today than they would have been had the state kept open and built planned nuclear plants. In the 1960s and 1970s, California's electric utilities had planned to build a string of new reactors and new plants that were ultimately killed by anti-nuclear leaders and groups, including Governor Jerry Brown, the Sierra Club and Natural Resources Defense Fund (NRDC).²¹³

Other nuclear plants were forced to close prematurely, including Rancho Seco and San Onofre Nuclear Generating Station, while Diablo Canyon is being forced to close by California's Renewable Portfolio Standard, which excludes nuclear and other places. Had Rancho Seco and San Onofre stayed open, about 60 percent of the amount of power now produced in California would be from clean (very low-carbon) energy sources as opposed to just 47 percent. And if the announced nuclear projects had been constructed instead of abandoned, all of today's in-state power could have been coming from low-carbon sources.²¹⁴

D. Why California Pays More for Less

Housing and energy aren't the only thing making California so expensive. The cost of government services is also unusually high. A big part of the reason is the influence of special interest groups,

including public employee unions. Another is the influence of private sector interests.

While the number of prisoners incarcerated in California declined 12 percent between 2011 and 2015, the total amount California spends on prisons rose by \$560 million.²¹⁵ As a consequence, California today spends more per prisoner than any other state, \$65,000 annually, which is the same amount it would cost to send him or her to Stanford University for a year.²¹⁶

The reason for the high cost is the pay raise that Gov. Brown and the legislature gave to prison guards in exchange for their union agreeing to reduce how many prisoners are incarcerated.²¹⁷ The prison guards union, the California Correctional Peace Officers Association (CCPOA), contributed \$2 million to Gov. Brown for his 2010 election campaign,²¹⁸ and has spent over \$20 million on political campaigns since 1989.²¹⁹

The increase in prison guard salaries is reflective of the broader increase in public funding of government employees. In 1999, legislation signed by Gov. Gray Davis allowed over 200,000 government workers to become eligible to collect their retirement pensions at the age of 55, often collecting over half of their highest annual income for the rest of life. Officers with the California Highway Patrol are allowed to retire at 50 and receive 90 percent of their highest salary for as long as they live. The pensions alone cost California taxpayers \$5.4 billion per year — 30 times more than was paid before 2000.²²⁰

The result is that California taxpayers are funding retirement benefits far larger than they themselves receive. Most private sector workers have no pension, little in retirement, and depend heavily on Social Security payments which average \$16,000 per year. One-third of Americans have no retirement savings, and the median retirement savings is \$111,000. A person would need \$2.6 million in savings in order to receive retirement benefits the size received by Highway Patrol officers.²²¹

California public employees contribute to their retirement, but not very much. Most state workers contribute five to 11 percent where the state contributes 24 percent. Highway Patrol officers contribute 12 percent while the state contributes 42 percent. They enjoy an

average annual pension of \$96,000 per year and their average age of retirement is 54.²²²

The state pension managers “had projected in 1999 that the improved benefits would cause no increase in the state’s annual pension contributions over the next 11 years. In fact, the state had to raise its payments by a total of \$18 billion over that period to fill the gap,” notes *Los Angeles Times* investigative journalist Jack Dolan. “There was no real taxpayer representation in that room,” the pension fund’s former chief actuary told Dolan. “It was all union people. The greed was overwhelming.”²²³

Gov. Davis and legislators received significant donations from public employee unions. Before and after pensions were enlarged Gov. Davis received \$5 million in donations from public sector unions.²²⁴

Public employee unions have an outsized impact in Sacramento, but so too do private sector investors and firms. Consider Gov. Brown’s “Water Fix” proposal to build water tunnels to deliver water from the Bay Area’s Delta — where the Sierra snowmelt meets ocean water — to the southern part of the state.

The only publicly available independent evaluation of the project found that the cost of the \$17 billion tunnels would be four times higher than its benefits. “The WaterFix is the most costly water proposal in California history,” notes an independent analyst hired by counties that would be affected by the project, “so it is unusual that the California Department of Water Resources (DWR) has not followed its own planning guidelines and issued a benefit-cost analysis of the proposal.”²²⁵

Even the *Los Angeles Times*, which advocates building the tunnel, recognizes that there are other ways to generate adequate water supplies for southern California:

There are other rivers to tap, if we expand our definition of “river.” One is the river of wastewater this region sends daily into the ocean. Another is the river of stormwater that flows to the sea as well during those few winter storms that still come our way, even if they have been scarcer this year. Those two sources require a 21st century approach to

engineering — fewer aqueducts, shorter distances, more intensive cleansing and better use of underground storage.²²⁶

Meanwhile, Brown's California Water Commission refuses to award most of the \$7.5 billion in voter-approved bond funding for water management. None of the \$2.7 billion set aside for water storage has been spent, and only 14 percent of the \$4.8 billion for recycling, rainwater collection, desalination, wastewater treatment, and other measures, George Skelton of *The Los Angeles Times* recently discovered. "It's causing lots of people to scratch their heads," Tim Quinn, head of the Association of California Water Agencies, told Skelton.²²⁷

But water scarcity is not something the Brown administration is imposing on Californians equally. The water tunnel would likely benefit major donors to Gov. Brown and other Democratic leaders: Stewart and Lynda Resnick, billionaire agriculture investors who own Fiji Water, Pom Juice, and lucrative water rights for their fruit and nut fortunes. "The couple could score big if a \$15 billion water project championed by Governor Jerry Brown is officially approved in the next few years," reported *Fortune Magazine* investigative journalist Chloe Sorvino.²²⁸

Private sector lobbying may also be behind the train proposed by Gov. Brown to connect rural and urban counties. The Brown administration awarded the train contract to Tutor Perini Corp. despite it having the lowest technical and safety rating of all competing firms. Tutor perhaps uncoincidentally donated the maximum allowable to Brown's campaign.²²⁹ Gov. Brown later intervened with the California Supreme Court on Tutor's behalf.²³⁰ Later that same year, Gov. Brown vetoed an ethics bill that would have required more disclosure of campaign finance information, and reduced the size of gifts that lobbyists can give to state officials.²³¹

The coming self-driving car or autonomous vehicle (AV) revolution could obviate the need for a train. Two UC Berkeley students devised a plan for autonomous vehicles to travel at high speeds on existing highways. Their study found that creating a "Hyperlane" from San Francisco to Los Angeles would cost just \$12 million per

mile as compared to the estimated \$139 million per mile for the proposed slow-speed train.²³²

Such a train could become a massive stranded asset as a result of the coming revolution. Boston Consulting Group, in a report on AVs, wrote

Trains will remain the least expensive mode of transportation during peak times in urban areas. But during off-peak hours and in rural environments, they will lose riders to AVs. Rail companies may even end up in a downward spiral: with reduced overall ridership, rail companies' overall unit costs for all remaining passengers will escalate because of the inherently high proportion of fixed costs in operating a train network.²³³

E. Absolute Power

Given the severity of the state's housing crisis one would think Gov. Brown would be seeking to enact, with the support of his legislative supermajority, sweeping reforms to address it, but in his 2018 State of the State speech Gov. Brown didn't once mention the words "housing" once.

Gov. Brown regularly says there is little he can do about those problems. "The overwhelming capitalist flow of money and people is what it is," Gov. Brown said of housing. "You can't change CEQA," he said about the law that stands in the way of homebuilding. And regarding the problems in the schools, Brown asked, "what makes you think that the Legislature can fix it?"²³⁴

And yet when it comes to energy and infrastructure spending, Gov. Brown has never been passive. Across all four terms as governor Brown has intervened in energy regulation in ways that have benefitted his donors, friends, and family — including his father and his sister. And since 2011, thanks to the great powers granted to him, Gov. Brown and his administration have been able to conduct the people's business largely without oversight, checks or balances.

In the 1970s, Gov. Brown and his appointees routinely took actions that benefitted the Brown family's oil wealth. A Brown appointee

changed an environmental law to kill a Chevron refinery that would have competed with the Brown family's Indonesian oil import monopoly. Later, Brown and his father lobbied for a liquified natural gas (LNG) terminal.²³⁵ Brown directly lobbied the Mexican government along with a Mexican oil and gas entrepreneur and donor to Brown's political reelection, sparking an FBI investigation and a *New York Times* investigation.²³⁶

Back in power, Gov. Brown and his appointees took actions that directly benefited his sister, Kathleen Brown, who as of 2016 owned 1,000 acres of oil and gas properties and served on the board of directors of Sempra Energy, one of the country's largest natural gas companies, and Renew Financial, which finances renewable energy projects. Actions by Brown appointees kept open Aliso Canyon, a natural gas storage facility owned by Sempra, which suffered a catastrophic leak and mass evacuation in 2015.

After the Aliso Canyon blow-out, Gov. Brown kept the cause of the accident a secret. "Months into the efforts to stop the leak," notes Consumer Watchdog, a liberal anti-nuclear organization, "Brown issued an executive order keeping any investigation of the causes and whether it could or should be shut down secret."²³⁷

Gov. Brown has repeatedly taken actions to benefit friends and allies by loosening environmental regulations. For instance, in 2011, Brown fired two state regulators — at the behest of long-time ally and former governor, Gray Davis, an attorney for Occidental Petroleum — because they were enforcing federal clean water regulations for oil and gas fracking.²³⁸

Brown appointees at the California Public Utilities Commission (CPUC) give large contracts to Democratic Party donors including Tesla's Elon Musk and celebrity VC John Doerr. In 2011 CPUC awarded 67 percent of available subsidies for energy storage (\$219 million of \$328 million total) to a single company, Bloom Energy, partially-owned by Democratic donor and venture capitalist, John Doerr, despite the fact that its fuel cells run on natural gas and thus produce power dirtier than that produced by California's electric grid.²³⁹ Since the start of 2017 alone, CPUC's

Self-Generation Incentive Program (SGIP) has awarded \$20,555,128 in incentives to Solar City and \$4,340,005 to Tesla.²⁴⁰

The CPUC is under federal and state criminal investigation for its role in forcing the closure of San Onofre nuclear plant. In that case, the appointed head of the CPUC was caught trying to divert money from a ratepayer settlement to a new UCLA think tank that he expected to lead.²⁴¹ Afterwards, a CPUC judge filed a whistleblower complaint saying she was fired after cooperating with state and federal criminal investigators looking into the San Onofre closure and the San Bruno natural gas explosion.²⁴²

A few months after the scandal broke, a longtime Brown ally, Susan Kennedy, threw a gala dinner for the former head of the CPUC who at the time was under federal and state criminal investigation. A former CPUC Commissioner herself, Kennedy made sure that the companies including Pacific Gas & Electric that benefit from CPUC decisions contributed to the gala dinner. A few years later, the CPUC awarded Kennedy a battery contract reported to be \$100 million, even though her company makes neither batteries nor the software to manage them. CPUC's deliberations and the battery contract itself were, as usual, entirely secret.²⁴³

Few things better express the apparent attitude of Gov. Brown toward California's government than when in 2014 he ordered California's Division of Oil, Gas and Geothermal Resources to explore his family's ranch land for oil and gas rights. The agency produced a 51-page report complete with satellite-images of oil and gas deposits for the area around Brown's ranch lands.²⁴⁴

F. Exclusion & Exploitation

If Gov. Brown and the Democratic supermajority had delivered abundant housing, high-wage jobs, world class schools, cheap energy, and fiscal stability then perhaps the political corruption documented above could be dismissed as the price that had to be paid in order to "get things done," in Brown's words.²⁴⁵ But instead the corruption has gone hand-in-hand with scarce housing, underperforming schools, rising emissions, high energy prices, rising inequality, unfair taxes, and chronic financial instability.

Past California governors engaged in transactional exchanges with interest groups but they also fought rent-seeking interests in order to keep housing, transportation and energy prices low to accommodate a growing population.²⁴⁶ Gov. Hiram Johnson, the progressive Republican who fought the railroad monopoly, went on to support the New Deal and the federal government's investment in California's infrastructure. And Gov. Pat Brown, Jerry's father, continued Johnson's legacy from 1959 to 1967 by investing in state water projects, highways, and a system of universal higher education.

Gov. Brown could not fulfill the progressive and humanistic vision of either his father or Johnson because he never embraced it. Instead, he loudly counseled sacrifice while quietly advancing the interests of California's propertied elites. "A simpler way of life is coming upon us," Brown told conservative intellectual William F. Buckley in a TV interview in 1975, "and the accumulation of possessions and material indulgence is impossible over time because of the ecological limits imposed on this planet."²⁴⁷

Brown engaged in symbolic acts, like foregoing the Governor's Mansion for a mattress in an apartment, which suggested he too would be making sacrifices when, in practice, his actions resulted in more sacrifice by Californians who were younger, poorer, working-class, less-educated and property-less than their older, more educated, and wealthier counterparts. And to some extent this must be the case when implementing policies that increase the cost of housing, energy, food and other basic necessities. Such pro-scarcity policies are regressive in that they require that the poorest among us sacrifice the largest percentage of their incomes.

The same coalition that maintains the exclusionary laws that make housing expensive — Gov. Brown, Sierra Club, NRDC, and others — also make energy expensive. They prevent the building of and close the state's nuclear plants, which constrain supplies and make California ever-more dependent on natural gas. They make California's gasoline expensive through restrictions on refineries, taxes, and turning a blind eye to probable price-fixing. They award lucrative contracts to well-placed insiders like Susan Kennedy, John Doerr and Elon Musk. And they subsidize renewables that resulted

in net transfers of wealth from poor and middle-income ratepayers to the affluent.

Originally, opponents of the state's nuclear plants were forthright about their desire to create energy scarcity. "If a doubling of the state's population in the next 20 years is encouraged by providing the power resources for this growth," wrote Brown ally, David Brower of the Sierra Club, in 1966, the state's "scenic character will be destroyed."²⁴⁸ Amory Lovins, an influential advisor to both the Sierra Club and Gov. Jerry Brown, said, "Even if we were to find a source of cheap, clean energy, we should be opposed because of what we might do with it."²⁴⁹

Today, the Brown Administration greenwashes exclusionary policies that are harmful to the environment and people. Gov. Brown speaks apocalyptically about climate change and species extinction even as his administration implements or maintains policies that increase air pollution and prioritize ranching over homebuilding. Brown defends CEQA as "the people's law" when in fact it is used by wealthy and powerful interest groups to block homebuilding, which is a major if not most important driver of the state's poverty and inequality.

While the Brown Administration greenwashes the impact of its energy and environmental policies, it "brownwashes" its treatment of immigrants, who work in California in a state of semi-servitude. A central right for all workers is to have the freedom to quit a job and safely report employer abuse including underpayment, but those rights are denied to seasonal Latin American workers, south Asian H1B workers, and undocumented immigrants alike.

Lack of concern for the working class today translates into lack of action to protect them in the future. One in nine workers — about 16 million U.S. workers — could be impacted by the autonomous vehicle (AV) revolution, the U.S. Commerce Department finds, which California has done more than any state to create.²⁵⁰ As AVs start to saturate markets, 300,000 U.S. jobs could be lost annually, according to a study by Goldman Sachs. Truck drivers more than bus or taxi drivers will lose the bulk of the jobs, given that they comprise three of the four million driver jobs in the United States.²⁵¹

California will be particularly hard-hit with 346,660 professional drivers,²⁵² with 130,640 of them heavy and tractor-trailer truck drivers.²⁵³ Unless California prepares for this coming shift, the AV revolution could exacerbate rising social inequality. Without a program to create new jobs, former drivers could find themselves suffering from the same unemployment and despair that manual laborers have suffered from over the last 30 years.

Given the gulf between the claims being made about California as a progressive paradise and the reality of it as a state of deep inequality, exclusion, exploitation, unfairness, and corruption, it is understandable that there is today a public backlash against the state's gasoline tax, which may reflect not only the public's stress at the high-cost of living but also its distrust of California's government.

Sections Three: California for All

A. Clean Up California

In the past, when part or all of the California Dream was threatened, the people of California have demanded, and enacted, strong reforms. In 1910, Californians elected the progressive Republican, Hiram Johnson, who ended the price gouging by Southern Pacific Railroad, and its political grip on Sacramento. In 1946, the legislature created the California Public Utility Commission (CPUC) to insure fair pricing by electric utilities. When faced with corruption of regulators, the state required greater transparency of government agencies.²⁵⁴

These reforms gave Californians the confidence they needed that their taxes would not be wasted on projects that benefitted a few insiders and rather would be spent to benefit the public's interest.

California needs a new wave of political reform to curb corruption. That should start with breaking up the corrupt CPUC and making all but the most sensitive of its deliberations and actions transparent and open to public scrutiny. Today the CPUC's burden is excessively large, forced to deal with everything from ride-sharing services like Uber and Lyft to regulating the state electric utilities. Splitting the CPUC into two or more entities, and requiring a high level of transparency, will go a long way toward curbing corruption.

Beyond the CPUC, California needs a New Sunshine Act to impose transparency on other government agencies. With transparency, government agencies will be forced to curtail the increasing frequency of no-bid contracts awarded to friends and campaign contributors of elected officials. The California Lands Commission, California Water Commission, California Energy Commission, the University of California, the [Commission on Judicial Performance](#), and myriad other agencies that shield their deliberations should be forced to open up, and clean up, their act.²⁵⁵

B. Automate for the People

Such reforms would be in service of a high-productivity and high-wage vision that creates a rising tide and lifts all boats. Rising productivity allows those things that were once luxuries — from smart phones to single-passenger cars — to become cheap and accessible to all. And greater wealth from economic growth in turn gives government and society the resources it needs to support those workers negatively impacted by automation and other measures of increasing productivity.

Walk into almost any McDonald's restaurant today and you can order your food from a kiosk, which replaces cashiers. When the plan was announced, McDonald's share price hit an all time high as investors applauded what was viewed as a massive labor-saving, and thus cost-saving, device. With unemployment at record lows and the low wages of McDonald's cashier jobs, there was little in the way of protests against McDonald's kiosks.²⁵⁶

But for low-skill workers, losing any job can be devastating, and McDonald's investment in automation is just the beginning. What happens when drivers are no longer needed?

Protecting its low-income workers from job losses from automation requires California to renew its focus on selling to the export sector. Between 1990 to 2008, the export sector of the economy enjoyed the greatest increase in GNP and wages.²⁵⁷ And since 2009, the traded sector has produced over half of all GNP gains despite constituting one-third of the economy.²⁵⁸

The good news is that the autonomous vehicle (AV) revolution could create significant manufacturing and related jobs in California. The size of the global market for AVs will be enormous, with current estimates at \$42 billion annually by 2025.²⁵⁹ And there are over two dozen companies including leading automakers, Google, Uber and others currently testing AVs in California.²⁶⁰

But for the AV revolution to benefit California's people, it will need the political reforms described above, and the tax and regulatory reforms described below.

California's prosperity has long rested on shared state and federal investment in modernizing infrastructure, technology, and education. Starting in the 19th century, state government supported large water and irrigation projects to create farms from deserts. During World War II, the federal government created the state's aerospace and information and communications industries. And after World War II, California built a world-class and universal higher education system.

These investments helped give rise to Apple, Google and Facebook. Microchips, personal computers, the Internet, and every major technology now found in the iPhone came out of federal government investments, particularly from the Department of Defense.²⁶¹ These three big California-based companies brilliantly commercialized what the American taxpayer funded.

Economists have for the last half century recognized how technological innovation can increase productivity, which is the driver of growth in output, wages, and profits.²⁶² New technologies increase productivity by allowing people and firms to do more with less. Some of the examples people are most familiar with are telegraph, radios, telephones, cell phones, microchips, the Internet, and now smart phones. These products and services increased the speed and efficiency of communications and made it cheaper to communicate, find, and share information.²⁶³

Transportation and communications and information revolutions are frequently combined, as they are in AVs. Telegraphs travelled across the country along railroad lines. Radios were coupled with cars. Jet planes rely on radar. AVs rely on land-based radar, global position service (GPS), radio, and microchips.

"Artificial intelligence, vision systems, lidar sensors, memory chips, app creation, communications expertise, investment capital," notes *Los Angeles Times* reporter Russ Mitchell. "The development of everything that goes into a driverless car, other than the car itself, is centered in California."²⁶⁴

A strong effort should be made to ensure these crucial sustainability innovations are not only invented and developed but also taken to scale in California. California has been a global leader in developing AVs and other kinds of automation, but has not done enough to prepare either for the downsides of AVs, such as job loss and environmental destruction, or the upsides, such as economic and job growth and more abundant, less expensive housing.

Embracing an innovation and productivity-focused economic strategy requires a holistic view that considers “trade, tax, talent, technology, and regulatory policy from the perspective of advancing competitiveness, innovation, and productivity,” argue Robert Atkinson and Michael Lind in their forthcoming *Living With Giants*. Taxes should be reduced and incentives provided not to all companies but rather firms in the traded sector of the economy, including manufacturing.²⁶⁵

California could lead the nation in creating the appropriate standards and regulations for AVs. AVs could be coordinated by a centralized computer (such as in the proposed high-speed Hyperlane) or communicate vehicle-to-vehicle. “Regulators need to settle this question,” argues economics writer Megan McArdle.

If self-driving cars are going to include vehicle-to-vehicle communications, then developers should know that now, rather than wasting a lot of time developing workarounds for problems that could more easily be solved with V2V. Or conversely, basing their plans around expected vehicle-to-vehicle systems that cease to be required by regulators, forcing them to go back to the drawing board. Such slowdowns to innovation will have a price -- in dollars, in human lives.²⁶⁶

While California’s manufacturing sector has declined significantly, it is still the nation’s largest manufacturing sector. Manufacturing produces 11 percent of the state’s economic output – about ten times more than the output of the state’s more high-profile agriculture industry.²⁶⁷ Today, manufacturing employs eight percent of the workforce – 1.3 million people.²⁶⁸

Because California is such a large market, it can impose local sourcing requirements on companies that sell in-state. California should consider local sourcing requirements imposed on foreign automakers as a possible strategy. In the 1980s and 1990s, the U.S. made a deal with foreign automakers. In order to sell in the United States, foreign automakers were required to establish factories here.²⁶⁹ The jobs were non-union and the wages lower than those paid by U.S. automakers in Detroit, but they paid higher than prevailing wages in the U.S. South. California already imposes its own energy efficiency demands on automakers, it can impose local sourcing requirement as well.

One obvious place for a new industrial center is the Central Valley – California’s Heartland – with its cheap agricultural land, its close proximity to California’s ports, its abundance of relatively low-skilled workers, and high poverty rates. California could offer firms the infrastructure and incentives they need to locate in California Heartland, and not in competitor states of Texas and Utah. The key would be to streamline the permitting and regulatory processes, as well as remove disincentives on investment.²⁷⁰

The automation and manufacturing revolutions can also benefit the agriculture industry including meat production in the Central Valley while reducing their environmental impact. Drones are already being used in farming to make irrigation, pesticide, fertilizer, and herbicide applications more precise.²⁷¹ California companies are already pioneering animal-free (cultured lab) meat production.²⁷²

C. Humanize & Electrify Transportation

One of the most important potential benefits of AVs is radically reducing traffic and pedestrian deaths and injuries. In 2016, 3,623 people were killed in California, representing a 7 percent increase from driving fatalities in 2015.²⁷³ National fatalities are up 5.6 percent from 2015 and reached 37,361 deaths in 2016.²⁷⁴ Some commentators attribute the increase in traffic fatalities to the increased use of mobile devices, a trend that only makes the case for transitioning to AVs more urgent.²⁷⁵

Through superior spatial awareness and reaction time, it is estimated that autonomous vehicles could reduce road accidents by up to 90 percent, according to one firm's research.²⁷⁶ Taking 2012 as an example, a reduction in accidents of this size may have saved around 190 billion dollars nation-wide.²⁷⁷

AVs could reduce traffic congestion at a time when traffic congestion in Los Angeles and San Francisco was the first and fourth highest in the world in 2016 respectively, up from second and eleventh in 2015.²⁷⁸ The average LA driver spent 104 hours driving in congestion, while drivers in San Francisco spent 82 hours in traffic.²⁷⁹

One mechanism for reduced congestion may be freeing up space used by parked cars and taken by cars seeking parking.²⁸⁰ Up to half of the space on our streets is taken up by parked cars. A study by the San Francisco Municipal Transportation Agency finds that at any given time, up to 30 percent of cars circulating in San Francisco are searching for parking.²⁸¹ Some patterns of congestion could be reduced by eliminating parking on certain high-congestion streets and encouraging the adoption of roving robot cars.²⁸²

AVs have the potential to humanize transport by offering more convenience and efficiency than today's vehicles, buses or trains. Unlike mass transit, cars permit riders to travel point-to-point and make multiple stops in a single trip. New research shows that the increase in car ownership among former transit riders is behind the large decline in mass transit.²⁸³ Cars allow riders to alter their destination mid-route. AVs could increase mobility for the disabled, elderly, and minors at a cost lower than existing paratransit services.²⁸⁴

These new transportation technologies pull new sources of energy into the economy. It was coal-powered trains and ships that expanded the use of coal and allowed much of humankind to stop burning wood for fuel and using crops for horses and other draft animals. It was petroleum-powered trains, ships, cars, and jet turbines – both for jet planes and electricity generation – which have allowed humankind to move away from coal to diesel, gasoline, and natural gas.²⁸⁵

The transportation-and-energy revolutions are massive drivers of environmental change, often for the better. As we go from biomass to coal to oil and natural gas, we have reduced our ecological footprint – the amount of Earth’s land we take for ourselves. When humans went from using biomass-powered horses for transportation to trains and cars, an area the size of California was no longer required for growing their feed.²⁸⁶

When humans switch to fossil fuels and stop using wood for heat we allow for conservation of forests and wildlife. When we transition from coal to oil and natural gas, whole mountains in places like West Virginia are saved from destruction. And when we transition from burning wood, dung, and biomass to hydroelectricity and fossil fuels, we take the smoke out of our homes and significantly reduce respiratory disease.²⁸⁷

AVs could significantly accelerate the transition from petroleum-based vehicles to electric vehicles (EVs) or fuel cell vehicles (FCVs) powered by hydrogen gas. The main problem with electric cars so far is their limited range and the inability of drivers to quickly recharge electric car batteries, making long-distance travel difficult if not impossible. This problem is potentially solved by having fleets of roving robot EVs that at any given time are recharging. But even internal combustion AVs, modeling finds, would be more efficient and result in less air pollution.²⁸⁸

AVs could thus play a key role in the state’s climate mitigation efforts. Transportation alone accounts for 39 percent of California’s emissions, as of 2015.²⁸⁹ To simply replace all of the petroleum in the country used for the nation’s transportation, the size of the electricity sector would need to increase by at least 35 percent.²⁹⁰ In California, with lower per-capita electricity usage but higher per capita driving mileage, this figure is a lower bound. And, further, electricity consumption could be boosted even higher if the transition to autonomous vehicles lowers the per-mile cost of travel, resulting in more and longer trips.

To achieve California’s climate goals the state will need to increase EVs from today’s 160,000 to five million cars by 2030,²⁹¹ There are 34 million registered vehicles in California with 24

million of them cars.²⁹² In 2015 there were 62,166 EVs among the two million cars sold in California.²⁹³

To fuel five million electric cars with the same electricity usage as Nissan Leafs and driving the same yearly mileage as today's drivers, California would need almost the exact amount of electricity annually (18,000 GWh) that would be generated by a near-zero carbon power plant the size of Diablo Canyon.²⁹⁴ And to generate enough power for 24 million cars, California would require the equivalent of five power plants the size of Diablo Canyon.²⁹⁵

Keeping and even expanding the state's nuclear fleet will have fewer landscape impacts than expanding fossil fuels or renewables. California's Diablo Canyon nuclear power plant produces 15 times as much electricity annually as the state's massive Topaz Solar Farm and yet requires just 4 percent as much land.²⁹⁶

People worry about nuclear waste, but solar power creates 300 times as much toxic waste per unit of energy produced as does nuclear power. Imagine that each year for the next 25 years (a reasonable commercial life for a solar panel), solar and nuclear power both produced the same amount of electricity that nuclear power produced in 2016.²⁹⁷ If their respective waste products were stacked on two football fields, the nuclear waste would reach some 170 feet, a little less than the height of the Leaning Tower of Pisa, whereas the solar waste would reach over 52,000 feet, nearly twice the height of Mount Everest.²⁹⁸

Each of these past energy transitions described above was characterized by a transition from "energy dilute" fuels to "energy dense" fuels. Coal has about twice as much energy stored in it as the same volume of wood, and oil (and liquified natural gas) have about twice as much energy as coal. These transitions, as noted above, are largely positive because less natural "matter" is being used to get the same amount of energy. Uranium is the most dense, at one million times more energy than the same weight in oil.

The cheap and clean electricity that California's nuclear plants provide will be needed for water recycling, desalination, and to

power EVs. Renewables such as solar and wind, given their unreliability and large land use impacts,²⁹⁹ will be insufficient. California should re-start SONGS and keep operating and expand the number of reactors at Diablo Canyon nuclear plants while pioneering innovative new fuels. Nuclear energy from both plants was always cheap – around five to six cents per kWh³⁰⁰ – and a critical hedge against energy price manipulation.

Pacific Gas and Electric has said that if Diablo Canyon were not excluded from low-carbon portfolio standards, keeping it open would be the best way to meet those standards.³⁰¹ By keeping Diablo Canyon open and re-opening San Onofre, California could, after 2025, reduce carbon emissions coming from the state's electricity grid by one-third or more. When both plants were operating in 2010 they constituted about 40 percent of in-state electricity from clean energy.³⁰²

This year and next, three nuclear plants, two in Georgia and the other in Illinois, will test "accident tolerant fuels" (ATFs) which hold the potential of not melting down for hours, and perhaps days, without cooling water. As these fuels develop, they will dramatically improve the economics of existing nuclear plants, as well as future ones. If accident tolerant fuels prove successful, the cost of operating nuclear plants could decline by as much as 30 percent, making nuclear energy instantly competitive even with cheap natural gas.³⁰³

D. End Poverty in California

What California does on automation, manufacturing, and infrastructure will have huge consequences for poverty and inequality in the state. "The loss of 5 million factory jobs since 2000 has devastated families and communities across the country," noted labor expert Steven Greenhouse in the *Los Angeles Times*. "The nation could well lose an equal number of driving-related jobs in the next 10 or 20 years, but a similar devastation need not follow."³⁰⁴

California should work with AV companies and develop a plan to help workers displaced by automation – from McDonald's farm workers to truck drivers. Many of the relatively low-skill and low-

wage trucking and taxi jobs could be replaced by higher-skill and higher-wage jobs in AV manufacturing, maintenance, and management.

This should start with adopting key training and apprenticeship programs today and linking them between the big AV companies and California's network of high schools and community colleges.

Rising specialization and desire for social and soft skills has led to an emerging consensus among [researchers and scholars](#) that the older model of a four-year higher education is being replaced by less-linear educational pathways, including ones that last a lifetime.³⁰⁵ Not everybody wants or needs to go to a four-year college. But many will need a vocational education that will give them the skills they need to make more money after high school or a two-year community college.

Consider Germany's continuously modernized dual-education system. It combines vocational education with an apprenticeship program, which allows students the opportunity to gain real-world occupational experience alongside traditional theoretical learning. The system has been successful in preparing young Germans for careers. Since the implementation of major reforms in 2005, the share of Germans in their 20s without formal employment qualifications declined from 16.5 percent to 12.9 percent. The system now offers nearly 65 percent of 16-20 year olds workplace training in addition to classroom learning, up from 57 percent in the early 2000s.³⁰⁶

These supports should be tied to California's system of higher education, as well as high school vocational educational, with oversight by the companies for training workers and apprentices. A significant amount of training is best led by employers. Students, workers, teachers, and professors are simply not going to know which skills they'll need. By contrast, the employers know exactly what skills they need. Since the training benefits the industry and the economy as a whole, its cost should be socialized.

Today, California should compete with Germany, Japan, and Singapore in information technology, advanced manufacturing, and biotech, not with the low-wage jobs of Mississippi and

Alabama. While there is hardship associated with replacing low-skilled McDonald's workers with kiosks or drivers with AVs, over the medium to long-term, the substitution of machines for labor is what increases productivity, growth, profits, and wages.³⁰⁷ Promoting automation thus supports the goal of increasing the value of labor. This approach will be aided by raising the minimum wage.

There will always be some people who are poorer than others, but we can permanently abolish true material deprivation by setting the minimum wage so that no employee working 40 hours a week lives in poverty. This, like housing, is a moral issue: individuals who work hard and play by the rules should be able to achieve a standard of living that confers dignity, not poverty.

And raising the minimum wage above poverty levels supports a high-productivity growth strategy of shedding low-wage jobs – from McDonald's cashiers to manual farm work to janitorial services – through automation. The evidence is overwhelming that high wages encourage automation while low wages retard it.³⁰⁸

Raising the minimum wage can do for the California Heartland what it did for the American South, which owes much of its growth and prosperity to the federal minimum wage. When it was imposed, Southern farmers fought against it. But over time, they invested in tractors and other machinery to save money on hired hands.³⁰⁹

Raising the minimum wage should be done gradually over a ten year period to give laggard industries like agriculture and housing construction the time they need to make the needed automation and productivity investments more broadly. Ending poverty cannot be done overnight, and it will require the cooperation of, not opposition from, the state's agricultural, construction, restaurant and other industries.

E. Equalize Rights for Workers

California entered the United States as a free (anti-slave) state in 1850. It was a moral position but also one backed by an economic alliance. Prosperous and well-educated abolitionists formed an

alliance with gold miners who opposed the introduction of slave labor which would drive down the value of their gold and their labor.

We must renew California's historic commitment to free labor. All workers in California should have the same rights. First and foremost, all workers, whether citizens or immigrants, must have the freedom to quit their job and find another one. Guest worker programs whether for agriculture or high-tech deny workers their freedom to quit and find alternative work through threat of deportation. Californians should demand the federal government end these programs and grant green cards, which give foreign workers the freedom to quit and find other work.

Establishing such worker rights must thus lead to immigration reform. We should protect those immigrants who are here, including those who came here illegally and we should control the border to reduce continued flows of unregulated workers. The task of shifting the economy from low-skill and low-wage agricultural jobs to high-skill manufacturing and biomedical jobs is far more difficult if there is an unending in-migration of low-skilled immigrant workers.

We need the immigrants who are here to be safe and legal while ensuring that we only take in as many immigrants as we can handle if we are to give all Californians a better life. Appropriate border security is important, but the problem is far more easily solved through an "e-verify" system so that employers can quickly and easily check who does and does not have a green card.

Public employees and private employees must be treated equally. Employment with public agencies often requires higher education, so higher pay in many instances is understandable. But it is unfair for public employees to be able to retire after 25 years at the same high levels of pay. It results in a situation where a public employee can retire at 50 and live to 100, thereby getting paid for three times as many years as he or she worked. Public employees should agree to a reasonable reform of this deeply unfair situation.

While current public employees and retirees should agree to reasonable compromises, public employees hired after 2020

should be responsible for funding their own retirement programs, just like private sector workers. Some have proposed raising the retirement age for public employees but if public sector workers are responsible for their own retirement then it does not matter to the public when they decide to retire. As such, this is a reform that both increases worker freedom while also protecting the interests of taxpayers, who are mostly fellow workers. This simple fix will allow the state to finally start paying off its \$366 billion debt, which threatens the state's future economic growth.

In exchange for higher pay and a reformed school schedule, public school teachers should give up tenure. Few other professions extend to employees tenure. In the case of university professors, tenure is a way to allow for freedom of inquiry and research, which is essential to the free functioning of the university. Such research and writing is not a core function of being a public school teacher, and thus there is no ethical or public interest justification for teacher tenure.

While some teachers, particularly older ones, will resist abolishing the tenure system, which favors seniority, other, younger teachers will support it. In the rest of the economy, employees are hired and fired based on performance, not seniority. If teachers want to be treated like professionals, with the salaries to match, they will need to give up this antiquated and counterproductive perk.

F. Make Taxes Fair

Both conventional liberal and conservative solutions to taxes and budget fail to address the problem. The dominant conservative solution is to cut taxes and government. But such a solution would not fix the housing crisis, schools, or the pension shortfall. In fact, it might make them worse. The dominant liberal solution is to raises taxes on the wealthy. But California's finances are, as we have seen, already lopsided toward income and especially toward the richest one percent. This group's income is dependent on the fortunes of the stock market, creating radical financial instability and a boom and bust budget.

We need to avoid the extremes of today's current situation where younger and often poorer homeowners are paying two to ten

times more in property taxes, and the much feared other extreme of elderly people being evicted from their homes.

These concerns are mitigated to some extent as Californian homeowners can sell a share of their home to an outside investor. Even so, some sort of reasonable compromise will be necessary. The homeowner who is paying ten times more might still end up paying more than his neighbor, but at least not at such a high extreme.

One approach would be for California citizens to develop a reform that is deliberative, evidence-based, and revenue-neutral. The goal should be to create fairness and stability. The reform should result in a new property tax assessment that allows for reduction in income taxes in a fair and progressive way so that the state can restore budgetary stability.

The legislature could empower an independent “citizens jury” comprised of several hundred ordinary California citizens, selected at random from a representative sample, to deliberate and create a reform of property and income taxes in a way that is more fair and stable. The citizens jury would use social media to allow their deliberations to be transparent, and for the public to respond and communicate to the jury. After they had finished, the crafted solution could be put on the ballot as an initiative to vote on.

G. Create Abundant Housing

Doubling or tripling the rate of homebuilding will require more housing in cities as well as in suburbs. Building many new homes in cities near transit lines, as recently proposed by California YIMBY, is an excellent first step. It is sponsoring legislation to “up-zone” neighborhoods near mass transit, which would make it easier to expedite housing, and overcome NIMBY opposition.

Up-zoning cities is vital but alone may not be enough to create sufficient new housing at low enough prices to meet California’s needs. This is true for physical, economic and political reasons. At a physical level, opening more of California up to housing construction creates more opportunities for increased supply. Economically, doing so results in lower prices. And politically, an

agenda to increase housing everywhere is likely to create a wider coalition for reform, and the critically important sense that the burden of new housing is not falling disproportionately on any one group of people.

One opportunity for greater housing comes from the AV revolution. AVs could significantly reduce the cost of travel, as measured on a per-mile basis, as did past transportation revolutions.³¹⁰ Contemporary support for forecasts of rising demand for cheaper transportation comes from evidence that ride-hailing services (e.g., Uber and Lyft) are being used to substitute for mass transit, walking, and biking. UC-Davis researchers concluded that “ride-hailing is currently likely to contribute to growth in vehicle miles traveled (VMT) in the major cities represented in this study.”³¹¹

Transportation revolutions allow us to travel faster and further. When we go from horse-draw carriages to steam engines to internal combustion engines to electric or fuel cell vehicles, we increase speeds and thus the amount of distance we can travel in a given amount of time. Research shows that the average human commute has remained about one hour per day as we transitioned from walking to carriages to cars. What changes is the distance we cover within that commute.

AVs could allow higher speeds of travel and thus longer distances to be travelled in a one-hour commute, allowing for the expansion of human settlement in California. Workers who today complain of a two hour commute into San Francisco or Los Angeles could see their commutes cut by 25 to 50 percent if they are traveling at higher speeds in AV hyperlanes. If that occurred, there would likely be a significant rise in demand to live in those more distant residential communities.

The economist Issi Romem makes a similar observation when he endorses greater density in suburban and not just urban areas:

I am suggesting that, while cities continue to fight the battle for development in dense hubs, they also question the de facto exemption granted to low-density suburban areas from the onus to produce more housing...Distributing the necessary amounts of new housing over vast low-

density suburban areas instead of just concentrating them in dense hubs would dilute the local impact on neighborhoods. It would make a large increase in housing more palatable vis-a-vis neighborhood character, and more gradual.³¹²

Another critical step is to reform CEQA. This should consist first of ending anonymity in lawsuits. Doing so would allow the public to see whether the lawsuit is being pursued by someone with a genuinely public and environmental interest or a self-interested business objective. Second, the allowance for duplicative lawsuits by different parties should end. Lawsuits should be consolidated and dealt with. Finally, legislators should limit the ability of judges to block developments if a CEQA study finds harm, and instead require appropriate mitigation.³¹³

All of this requires a shared, state-wide commitment. Every community needs to “grow up”, so to speak, and accept modestly more housing. Only a shared commitment will provide the assurance to communities that the burden of density is being shared equally. This is a question of fairness, first and foremost. As cities expert Edward Glaeser notes “we must never forget that any time we say ‘no’ to new building, whether in the city centre or on the edge, we are saying ‘no’ to families that want to experience the magic of urban life.”³¹⁴

H. Personalize & Modernize Education

Students at Oxford University in Britain spend a large part of their education in one-on-one tutoring sessions with their professors. Oxford’s educators have long understood that tutoring dramatically accelerates learning. Oxford’s tutorial handbook observes that

A tutorial is interactive. A significant proportion of the input always comes from the student. Part of this input by the student is a considered, thoughtful reaction to the reading and thinking that has been set for this tutorial. Part of the tutor's input, in turn, will take the form of questions and comments in response to this reaction. The student does not become passive at that point, though: on-the-spot

rejoinders to these questions and comments from the tutor are vital too.³¹⁵

But tutoring is expensive, which is why most universities don't do it. The cost of the teacher's time is entirely covered by a single student, rather than by 25 students during a lecture. What if there were a way to tutor children but at radically lower prices?

In a sense, there is: automation. But it's not automation of tutoring. It's automation of lecturing. The Internet already hosts video lectures by some of the best teachers of reading, math, and science in the form of Khan Academy. And there are myriad other high quality educational lectures, from the School of Life to Discovery Channel to TED, with the quantity and quality rising every year.

Automating lectures and turning teachers into tutors is called "flipping the classroom," and it is one of the few things almost everyone on all sides of the education debate support. There is a growing body of research demonstrating that it is "effective and scalable."^{316,317}

What automating lectures does is free up teachers to give individualized attention to a single student while the other students are watching lectures. Often students do not need a full hour-long tutoring session, but rather regular check-ins throughout the day to make sure they are engaging with the material and making progress. Such tutoring benefits both those students who are struggling with the material and those students who have mastered it and need a new challenge. Tutoring and digital lectures thus reduce both discouragement and boredom.

Flipping the classroom may also prove disruptive of the widely-researched social stigma of academic achievement in low-income schools. Children who are bullied for being top-performers risk becoming discouraged and seeing their talents and even lives wasted. Students who are bullied for being gifted in dysfunctional school environments can keep their achievements (and pride) private, allowing them to blend in rather than stand out in hostile settings.

Automating lectures could improve teacher job satisfaction, reduce the stress of classroom management, and reduce turnover. Teachers overwhelmingly prefer tutoring a single child over trying to control and teach a classroom of 25 or so children. Because tutoring accelerates a child's learning, teachers can enjoy the satisfaction and pride in a job well-done, and reduce the discouragement of having so many children left behind and discouraged, or far ahead and bored.

Some of those experts who have raised the alarm the loudest about future job losses from automation are also those who emphasize the need for educational systems that more strongly develop the skills that cannot be automated. "Such work includes tasks that require empathy, leadership, teamwork, and coaching," write Andrew McAfee and Erik Brynjolfsson in *Machine, Platform, Crowd: Harnessing Our Digital Future*. "As technology advances, high-level social skills could become even more valuable than advanced quantitative ones. And the ability to combine social with quantitative skills will often have the highest payoff of all."³¹⁸

For flipping the classroom to succeed, more time in the school day and school year will be needed, both for instruction time, whether automated lectures or tutoring, and for non-academic activities, including arts, field trips, project work, sports, physical education, and vocational education, including high school apprenticeships.

The obvious way to get more time is to align the school day to the 9-5 work day. A longer school day permits more academic instruction, as well as time for students to study and do homework without distractions. It would eliminate much of the problem of after-school care, which especially burdens working parents, letting them drop their kids at school before work and pick them up afterwards.

Along with an expanded school day, summer-school attendance should be expanded, perhaps to most of the student body. This is especially important for low-income students. Overwhelming evidence shows that summer school helps low-income students learn more, retain what they learn and close the achievement gap with middle-class students. [One study finds that one-quarter of](#) the

income-achievement gap is caused by differences in attendance rate.³¹⁹

A longer school day and school year may require more total hours worked by teachers, but not necessarily very many. The average teacher works 10 hours and 40 minutes per school day.³²⁰ If those hours were reduced to 40 hours per week, a teacher could work the same average number of hours annually for 48 weeks per year – which is about the same as the average U.S. worker³²¹

The new regime would be a win for teachers, parents, and students. A modernized schedule would eliminate homework for students and eliminate schoolwork for teachers. Students would do – and teachers would grade – classwork while at school. Teachers and their own families would be free to relax after dinner, and enjoy their time unburdened by the farm-era schedule we have been stuck with since the 19th Century.

Conclusion

While Californians are frequently divided by conflicting interests and values, the vast majority of us are united in our shared commitment to the California Dream. Like the American Dream, the California Dream is premised on homeownership at best or affordable rent at least; a good job; safe and efficient transportation; livable communities; and high-quality schools. Californians also put special emphasis on other values, including individual opportunity, environmental progress, and good government.

With population and social inequality growing and opportunities for socioeconomic advancement in decline, California is overdue for another period of reform and investment. In order for Californians to feel confident that their taxes are being well-spent, significant reforms are required in government permitting and contracting; education; housing; pensions; and taxes. But these reforms must occur within a larger context of economic growth through technological innovation and rising productivity.

The good news is that 65 to 70 percent of Californians say they support more housing in their own communities, which suggests that NIMBYs are a small but powerful minority. Even some prominent CEQA attorneys have called for reform to end the abuse of the law by NIMBYs, economic competitors, and unions seeking project labor agreements. "CEQA has... been misused by people whose move is not environmental protection but using the law as leverage for other purposes."³²² Wrote a progressive Berkeley professor recently for the *New York Times*:

I'm a committed environmentalist, and it made me rethink the way I engage with such issues: For example, I was a member of the Sierra Club for a more than a decade. But because of all the unwise battles waged by the San Francisco chapter against smart housing growth in the city, I quit to support other environmental groups.³²³

A broadly pro-human, pro-environment development alliance is required, one that unites all parties seeking more housing, both intensive or extensive, to overcome organized opposition, and

pursue an economic strategy that raises all boats. The obvious constituents of such an alliance would be high-tech companies whose employees need housing; Millennials; renters; developers; and labor unions, whose members make too much to qualify for subsidized housing and too little to afford to live near where they work.

California can be a light unto the world in pursuing a strategy of universal prosperity and environmental protection. A shared vision of economic growth and a new social contract is essential to transcending narrowly defined self-interest. The mindset for considering a series of grand bargains must shift from one of deal-making between interest groups to one of creating a wider vision of shared prosperity, social solidarity, and environmental protection.

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PRESIDENT PEEVEY: Just a quick question on the energy efficiency. If I'm reading this chart correctly, it's a pretty -- if I read this chart correctly, it's a pretty sizeable increase in rates due to energy efficiency....

MR. HOWARD [Southern California Edison]: We believe you'll see that in the customer bills, but we also have it levelized. So as you invest in energy efficiency you're not going to see direct rate decreases. You will see rates potentially go up as you see less users, as you use more energy efficiency.

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For most journalists, SONGS had to be closed in response to a mechanical failure of the steam generator. Southern California Edison, its owner, then used its influence to get a sweetheart deal out of the CPUC Commissioners. In this story, CPUC was “captured” by SoCalEdison.

But the evidence does not support the story of regulatory capture. In fact, the evidence is overwhelming that it was the Brown Administration, through CPUC, that captured Southern California Edison and, now, Pacific Gas & Electric. It was CPUC’s president that raised the issue of permanently closing SONGS – something Edison executives were not contemplating. In fact, they were working with the Nuclear Regulatory Commission to restart the plant.

Further, CPUC’s president dictated the exact terms of the deal that were eventually accepted by all parties, including the anti-nuclear groups that were in on the secret meetings. It wasn’t Edison who laid out the terms. The terms CPUC’s president Peevey laid out were so specific that the Edison executive famously grabbed the Polish hotel stationary so he could write it down.^[41]

The terms of the deal the CPUC president offered Edison were so specific, and involved such a large sum of money from California’s citizens – \$4.7 billion – that it is inconceivable for this researcher to believe Gov. Brown lacked foreknowledge.

There is now 40 years of evidence of Gov. Brown interfering at even the smallest levels with CPUC and other energy business: changing pollution regulations to benefit his family’s Indonesian oil monopoly; killing Sundesert; and lobbying Mexico’s President to approve a natural gas project; lobbying a Commissioner to win a PG&E natural gas project; his firing of two state environmental regulators at the behest of Occidental Petroleum; and Brown’s request that the state map his ranch for possible oil and gas deposits.

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