

## How Even Stronger California Climate Policies Could Spark A \$7 Billion Economic Opportunity

California is a global leader in the clean energy transition, with some of the world's most ambitious decarbonization policies. But even the Golden State, which met its 2020 greenhouse gas emission reduction target four years early, should be doing more.

Results from the newly released California Energy Policy Simulator (EPS) find the state's existing climate policy strategy risks falling short of California's 2030 target of 40% emissions reductions below 1990 levels. Findings suggest 2030 emissions will exceed the target by about 25 million metric tons—roughly 10 percent—even using optimistic assumptions about policy effectiveness.

There is still time to adjust, and the California EPS analysis identifies a package of policies that gets emissions on track. The policies are constrained to using currently available technologies and include a mix of ratcheting up existing policies and new initiatives. If implemented, these recommendations could be a net positive for the economy. California EPS results suggest that together, the recommended policies would create \$21 billion dollars in net benefits, including \$7 billion in direct economic benefits and \$14 billion in health and climate benefits.

California's climate strategy calls for the state's cap-and-trade program to make up the difference between reductions delivered by other policies and the 2030 target. But limitations in the economic model previously used to evaluate the 2030 strategy leave questions about whether the cap-and-trade program will be able to "close the gap." Our new model, the California EPS, provides unsurpassed integrated evaluation of economy-wide carbon pricing and sector policies. The California EPS is an open-source, peer-reviewed tool, available for download and use without charge.

Our modeling identified six recommendations, including a mix of strengthening current policies and new initiatives. Policy recommendations were crafted to reach the 2030 target while maximizing cost-effectiveness and minimizing political obstacles and technological risk.

1. Fortify the cap-and-trade program. California's climate strategy calls for the state's cap-and-trade program to soak up the difference between the 2030 target and the effects of other policies. The state should link the program's price floor—the minimum price accepted at emission permit auctions—to whether or not emission reductions are on pace for the 2030 target, with the minimum price rising faster if emissions are not falling fast enough. The California EPS models an increase in the expected carbon price from \$29 to \$63 dollars in 2030. This recommendation is the largest single driver of emission reductions in the package.

2. Modestly boost clean electricity goals. Senate Bill 100 sets a 60% renewable electricity standard for 2030 and calls for completely decarbonizing the state's electricity supply by 2045. These are already strong goals, but the electricity sector's rapid pace of technological progress creates a cost effective opening for an even faster transition. Increasing the 2030 requirement for carbon-free electricity by 7% cuts electricity sector emissions by 8 million metric tons of GHG emissions compared to existing plans.

3. Accelerate transportation sector decarbonization. Increase the share of new car and light truck sales to at least 80 percent zero emission vehicles by 2030, boosting electric vehicles (EVs) on the road to at least 7.5 million in 2030.

4. Jump start building electrification transformation. Increasing advanced electric heat pumps to at least 50% of new sales of water heaters and space heaters for residential buildings delivers 2 million metric tons of additional GHG emissions reductions in 2030.

5. Establish a zero emission performance standard for heat in the industry sector. Nearly 20% of California's natural gas demand is due almost entirely to making steam for oil extraction, necessary to coax the state's low quality oil reserves from the ground. This policy would jump-start the use of existing solar thermal heat—using mirrors to concentrate sunlight, a mature and proven technology—in the state's oil fields. It would also encourage faster commercialization of other promising emerging technologies.

6. Introduce a GHG emission performance standard for concrete production. Cement is the largest source of coal combustion in California, but exciting innovation in this industry could change that. We recommend setting a technology-neutral standard requiring steadily lower emissions from concrete production and, in parallel, a border carbon adjustment for imported concrete. Concrete imported from jurisdictions with weaker climate policies would be required to pay a fee—the border adjustment—to account for unregulated GHG emissions, leveling the playing field for in-state producers.

The World Resources Institute's Dan Lashof has articulated the idea of a "clean concrete standard," elegantly covering both in-state production and imports in a single policy proposal modeled on the state's low carbon fuel standard, which has already successfully vanquished legal challenges in the courts.

*Article continues at link below*

UNEMPLOYMENT

Region	December 2018	November 2019	December 2019	Percentage Point Change	
				1 month	12 months
San José–Sunnyvale MSA	2.5%	2.3%	2.2%	- 0.1	- 0.3
San Francisco MD	2.1%	1.9%	1.8%	- 0.1	- 0.3
California	4.1%	3.7%	3.7%	0.0	- 0.4
United States	3.7%	3.3%	3.4%	+ 0.1	- 0.3

INDUSTRY EMPLOYMENT

Sector—December 2019	San Jose MSA	San Francisco MD	Combined Region	Percentage Change (Combined Region)	
				1 month	12 months
<b>Total Nonfarm</b>	<b>1,176,800</b>	<b>1,203,600</b>	<b>2,380,400</b>	<b>+ 0.1%</b>	<b>+ 2.7%</b>
Construction	48,400	44,700	93,100	- 1.0%	+ 1.4%
Manufacturing	182,700	38,400	221,100	+ 0.5%	+ 3.6%
Retail Trade	91,600	81,800	173,400	+ 1.0%	- 1.1%
Information	101,600	93,700	195,300	- 0.1%	+ 6.0%
Professional & Business Services	246,300	305,100	551,400	- 0.2%	+ 3.1%
Educational Services	48,500	30,000	78,500	- 1.0%	+ 0.5%
Health Care & Social Assistance	130,700	119,400	250,100	+ 0.7%	+ 3.6%
Leisure & Hospitality	105,200	149,200	254,400	+ 0.9%	+ 2.2%
Government	106,100	135,000	241,100	- 0.7%	+ 3.8%

Note: San José MSA (San José–Sunnyvale–Santa Clara Metropolitan Statistical Area) = Santa Clara and San Benito Counties  
 San Francisco MD (San Francisco–Redwood City–South San Francisco Metropolitan Division) = San Mateo and San Francisco Counties

Source: California Employment Development Department, LMID

LABOR FORCE & ANNUAL CHANGE

9-County San Francisco Bay Area

	Labor Force			Employed			Unemployment		
	December 2018	December 2019	Change	December 2018	December 2019	Change	December 2018	December 2019	Change
<b>California</b>	<b>19,533,800</b>	<b>19,588,400</b>	<b>+ 0.3%</b>	<b>18,739,500</b>	<b>18,869,300</b>	<b>+ 0.7%</b>	<b>4.1%</b>	<b>3.7%</b>	<b>- 0.4</b>
Alameda County	857,400	858,600	+ 0.1%	833,600	837,100	+ 0.4%	2.8%	2.5%	- 0.3
Contra Costa County	570,700	570,700	0.0%	553,900	555,600	+ 0.3%	2.9%	2.6%	- 0.3
Marin County	142,600	142,900	+ 0.2%	139,400	140,200	+ 0.6%	2.2%	1.9%	- 0.3
Napa County	72,400	72,800	+ 0.6%	70,100	70,700	+ 0.9%	3.2%	2.9%	- 0.3
San Francisco County	586,600	591,700	+ 0.9%	574,200	580,400	+ 1.1%	2.1%	1.9%	- 0.2
San Mateo County	463,800	467,100	+ 0.7%	454,400	458,900	+ 1.0%	2.0%	1.8%	- 0.2
Santa Clara County	1,059,400	1,073,900	+ 1.4%	1,034,000	1,050,600	+ 1.6%	2.4%	2.2%	- 0.2
Solano County	210,600	207,700	- 1.4%	202,600	200,700	- 0.9%	3.8%	3.4%	- 0.4
Sonoma County	262,000	262,600	+ 0.2%	255,200	256,400	+ 0.5%	2.6%	2.4%	- 0.2
<b>SF Bay Area (sum)</b>	<b>4,225,500</b>	<b>4,248,000</b>	<b>+ 0.5%</b>	<b>4,117,400</b>	<b>4,150,600</b>	<b>+ 0.8%</b>	<b>2.6%</b>	<b>2.3%</b>	<b>- 0.3</b>

Note: Totals may not add correctly due to rounding

Source: California Employment Development Department, LMID

REGIONAL LAYOFF ACTIVITY

December 2019 Layoff Events

Company	Location	# Affected
Oakwood Worldwide	Multiple locations	9
Criteo Corp.	Palo Alto	77
<b>Total</b>		<b>86</b>

WARN SUMMARY

Events YTD <sup>†</sup> :	56
Individuals Affected YTD:	3,535
Individuals Previous YTD <sup>‡</sup> :	1,449

\* **WARN: Worker Adjustment and Retraining Notification**  
 (notice of mass layoff or closure)

<sup>†</sup> **YTD: Year to Date**  
 (Program year: July 1–June 30)

<sup>‡</sup> **Previous YTD:**  
 (Same date range as YTD, one year prior)

Note: Layoff data are preliminary and should be considered an estimate of monthly regional activity

Source: California EDD, CalJOBS: WARN database