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1st comprehensive cost/benefit study of climate policies in San Joaquin Valley finds over \$13 billion in economic benefits, mostly in renewable energy

Renewable energy, cap and trade and energy efficiency programs are creating jobs in economically vulnerable region

Amid concerns about the economic and employment impacts of California's ambitious climate policies, the first comprehensive, academic study of their effects in the San Joaquin Valley has found a total economic benefit of \$13.4 billion. The study, [The Economic Impacts of California's Major Climate Programs on the San Joaquin Valley](#), addresses compliance and investment costs as well as the benefits across the region, and finds a net boost to the Valley's economy from the state's major climate programs, including the creation of tens of thousands of jobs.

"The San Joaquin Valley is a bellwether for the state's climate policies, faced with unique challenges in terms of its environment and its economy," said F. Noel Perry, businessman and founder of the nonpartisan nonprofit group [Next 10](#), which commissioned University of California researchers to collect data, run economic models and produce the report. "But if climate and energy policies can work in the San Joaquin Valley, they can work anywhere in California – and serve as models for states across the country and around the world."

The Valley is especially vulnerable to air quality problems that climate policies tend to alleviate. But it also faces more socioeconomic challenges than other parts of the state and is less equipped to take chances with its economy.

“This report shows that even in one of the poorest and most disadvantaged regions of the state and nation, California’s existing climate policies can provide net economic benefits,” said Ethan Elkind, who coordinated the report for the Center for Law, Energy and the Environment (CLEE) at the UC Berkeley School of Law. Researchers looked at three key California climate and clean energy policies: 1) cap and trade, which established a market designed to reduce carbon emissions from major polluters; 2) the renewables portfolio standard (RPS), which calls for California to get 33 percent of its energy from renewable sources by 2020, growing to 50 percent by 2030; and 3) energy efficiency programs run by investor-owned utilities and overseen by the Public Utilities Commission.

“The Valley has a lot of carbon-intensive industries, so the economic costs of climate policies were quickly evident,” said Betony Jones, the report’s lead author and the associate chair of UC Berkeley’s Donald Vial Center on Employment in the Green Economy. “But we were surprised to find the economic benefits materialized quickly too, kick starting the region’s low-carbon economy.”

Cap and Trade

After accounting for compliance and other costs, the UC researchers estimate the cap-and-trade program had a direct economic benefit of \$119 million to the San Joaquin Valley, and boosted the economy by \$200 million when you include indirect and induced economic benefits. If you include spending that has been allocated but not yet disbursed, those numbers rise to \$1 billion in direct economic benefits and \$1.5 billion when including indirect economic benefits.

Proceeds from carbon auctions disbursed in the region so far have largely gone towards initial work on the state’s high-speed rail project, affordable housing, irrigation modernization and electric vehicle incentives. The study found that industries benefitting from the investment of cap-and-trade revenue, such as construction, generate more economic activity in the region than those industries bearing the costs of cap-and-trade compliance.

Researchers calculated a potential negative impact on 400 jobs due to compliance, but found that on a net basis, more than 700 jobs were created directly, and more than 1,600 supporting service and industry jobs were created indirectly, from 2013 through 2015. In the same period, state and local tax revenues received a \$4.7 million boost.

Renewables Portfolio Standard

A lot of attention is paid to the state’s carbon cap-and-trade program, but in terms of the San Joaquin Valley’s economy, the state’s Renewables Portfolio Standard (RPS) has had a

bigger impact so far. Construction on renewable-energy projects has resulted in \$11.6 billion in total economic activity in the Valley.

The San Joaquin Valley is home to 24 percent of the state's solar generation and 54 percent of the state's wind generation, providing significant employment opportunities in the region.

"Building and operating renewable energy facilities means jobs," Jones said. From 2002 to 2015, renewable programs created about 31,000 direct jobs in the San Joaquin Valley – for people building and operating renewable-energy facilities, for example – and created another 57,000 indirect and induced jobs for suppliers, supporting businesses and the like, for a total of 88,000 jobs. "Most of these direct jobs are the well-paid, local, career-track jobs the Valley really needs," concluded Jones.

Energy Efficiency Programs

The report found energy efficiency programs overseen by the California Public Utilities Commission (CPUC) are cost-efficient vehicles for families, businesses and institutions to save energy and money year after year. By cutting demand, efficiency efforts also reduce the need for costly new power-generating infrastructure.

Energy efficiency programs in the San Joaquin Valley are the most cost-effective in the state, according to the report authors' analysis of data reported by the CPUC. The report's researchers found these programs in the Valley have provided net economic benefits of \$248 million since 2010.

"Energy efficiency programs are job creators," Jones said. "From 2006 to 2015, utility energy efficiency programs created 6,700 direct jobs, two-thirds of them in the construction industry and 10,700 indirect and induced jobs in the Valley, for a total of 17,400 jobs. "

Policy Recommendations

Given the economic benefits of California's climate policies in the San Joaquin Valley, the researchers offered recommendations for maintaining and improving results as the state moves to further climate policies under SB 32 (Pavley, 2016) and SB 350 (De Leon, 2015).

Recommendations include removing uncertainty regarding key climate programs.

"The Valley's economy would benefit in particular from state leaders removing the legal uncertainty about the cap-and-trade program – especially the allowance auction mechanism – beyond 2020," Elkind said.

Other recommendations include ensuring that cap-and-trade auction proceeds are spent on Valley programs that cut greenhouse gas emissions and co-pollutants; expanding energy efficiency incentives in the Valley, where they yield greater energy savings than in more temperate parts of the state; and developing robust transition programs for workers

and communities affected by the decline of the region's greenhouse gas-emitting industries.

"There's been a lot of talk in Sacramento – and now Washington – about what California's climate and clean energy policies mean for jobs and for the economy as a whole," said Next 10's Perry. "We hope this report gives policymakers and stakeholders the kind of concrete data they need to weigh policy options and invest in the best choices for the San Joaquin Valley and the rest of the state."

About Next 10

[Next 10](#) is an independent, nonprofit, nonpartisan organization that educates, engages and empowers Californians to improve the state's future. With a focus on the intersection of the economy, the environment, and quality of life, Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state.

About The Center for Law, Energy & the Environment (CLEE)

The Center for Law, Energy & the Environment channels the expertise of the UC Berkeley community into pragmatic law and policy solutions to pressing environmental and energy issues. The Center's current initiatives focus on climate change, sustainable land use, healthy oceans, and clean water for California's future.

About the Donald Vial Center on Employment in the Green Economy:

The UC Berkeley Don Vial Center on Employment in the Green Economy conducts economic and policy research and analysis on climate change, clean energy, energy efficiency and employment in the green economy.