



The Economic Case for AB 32 California's Landmark Clean Energy Law

Smart energy policies spark job creation in California

- At **431,800 jobs today**, advanced energy is bigger by employment in California than the motion picture, television, and radio industries; mining and quarrying; semiconductors; and aerospace. **Advanced energy jobs grew 5 percent in the past year** – more than double the overall state job growth rate – and is **on track to grow 17 percent in the coming year**, to **more than 500,000 workers**, based on employer hiring plans.ⁱ
- California's 35-plus year history with energy efficiency shows that **50 new jobs were created** across the state's diverse economy **for every job forgone in the oil, gas and electric power sector**.ⁱⁱ
- Analysis from University of California researchers estimates that AB 32 policies could **increase household incomes by \$48 billion and create about 400,000 jobs**.ⁱⁱⁱ
- California **can reduce greenhouse gas emissions while growing the economy**; we have been doing it for the last 35 years. Innovative energy policies over the past three decades have **saved Californians \$56 billion on household energy costs** and allowed them to reduce expenditures on imported fossil fuels and redirect spending to **create 1.5 million full-time jobs**.^{iv}
- The **transition towards a cleaner economy is well underway throughout the West Coast region** with a Gross Domestic Product (GDP) contribution of \$47 billion and 508,400 full-time equivalent clean jobs in 2010. It is estimated that **up to 1.03 million net new jobs can be created between 2010 and 2020 for the West Coast**. GDP contributions of up to US \$142.7 billion and increased investments of between \$147-192 billion are also possible during this period.^v
- Analysis from University of California researchers estimates that AB 32 policies could **increase household incomes by \$48 billion and create about 400,000 jobs**.^{vi}
- California's **Low Carbon Fuel Standard (LCFS)**, a key component of AB 32, **could create as many as 9,100 new jobs for California**. This number could be higher, particularly if the state attracts more clean fuel production facilities and technology providers.^{vii}

California consumers & businesses save billions due to energy efficiency

- AB 32 will cause Californians to spend less to heat and cool their homes because energy efficiency measures will allow households and businesses to use less energy. Californian homeowners are expected to **save \$200 a year on electricity** due to AB 32.^{viii}
- Simple energy efficiency improvements to existing buildings yield **\$3 in savings on average for every \$1 invested**.^{ix}
- An analysis by The Brattle Group, an international economic consulting firm, found that AB 32 will have a barely noticeable impact on small businesses – less than a tenth of one percent in 2020. Moreover, by **investing in energy efficiency**, taking advantage of rebates, incentives, and other programs small businesses **can lower their energy costs significantly and achieve cost savings**.^x
- Increased energy efficiency benefits the general economy and consumers. **Consumers directly benefit from California's efficiency policies**. While California's average electricity rates per kilowatt-hour are higher than the U.S. and other large states, average monthly bills in California were lower and declined more significantly from 1992 to 2012 as energy efficiency improved.^{xi}

AB 32 is driving billions of investment dollars into California

- Cleantech received **\$521 million in 44 venture deals in the fourth quarter of 2014**. Funding dollars **increased 25 percent year over year**, while deal volume **increased 16 percent over the same period**.^{xii}
- At \$88 million, **Silicon Valley ranked 2nd in cleantech funding in the U.S.** in the fourth quarter of 2014.^{xiii}
- The **26 California companies in the Clean Energy Index** have **added employees at a median annual rate of 9.5 percent** for the past two years. That's **more than quadruple the 2.3 percent for the 115 U.S.-based companies in the index**. The state's **advanced-energy industry has more than 431,000 workers**, the most in the nation.^{xiv}
- Since 2006 when clean technology investment began to rise, **investors put a total of more than \$27 billion of venture capital and other financing into California clean technology companies**.^{xv}
- Policies like AB 32 and the state's Renewable Portfolio Standard are **driving demand for renewable energy and energy efficiency**, and as a result, **corporate investors have shifted their emphasis**.^{xvi}
- The LCFS is **driving investment in low carbon biodiesel, ethanol, renewable diesel, biogas, and electricity**.^{xvii}

AB 32 and the LCFS will lessen California's dependence on oil

- AB 32 policies will bring the next generation of fuel-efficient cars to the state. These clean cars are estimated to **save drivers more than \$5 billion in fuel costs in 2030** – that translates to \$315 per household.^{xviii}
- Reduced demand for imported fuels through a suite of AB 32 policies will shield Californians from the price volatility of these fuels. A first-of-its-kind study found significant savings if an oil price shock occurred in 2020, with California **consumers and businesses saving between \$2.4 and \$5.2 billion, and the average household saving up to \$362**.^{xix}
- The LCFS is likely to **lower the average price of transportation fuels and bring greater stability to fuel prices** in response to fluctuating crude oil prices, as the number of competitors selling in the wholesale fuel market increases as well as the diversity of fuel types.^{xx}
- Compared to the U.S. as a whole, **California is less dependent on carbon intensive energy**; the U.S. got 20 percent of its energy from coal and nine percent from renewable energy, compared to one percent from coal and 12 percent from renewables in California.^{xxi}

AB 32 will help stabilize California's economic future

- The most expensive way to respond to climate change is to ignore it. We are already feeling climate change impacts, and if left unchecked **climate change could cost California as much as \$47 billion every year in direct damages** and put at risk trillions of dollars of real estate, infrastructure, and other assets.^{xxii} Unrestrained greenhouse gas pollution also threatens water resources and important industries like tourism, entertainment, agriculture, and recreation that fuel the state's economic engine.
- By spurring greater use of clean alternative fuels and vehicles, the **LCFS will result in \$1.4 – \$4.8 billion in societal benefits by 2020 from reduced air pollution and increased energy security**.^{xxiii}

Opponents continue to release misleading, questionable studies

- A UC Davis Expert Review **discredits the assumptions, methodology and results of the Boston Consulting Group (BCG) study**, "Understanding the Impacts of AB32," funded by Western States Petroleum Association (WSPA), and released in June 2012. **If the expert reviewers were grading the WSPA/BCG study, they'd give it an "F" for fail**.^{xxiv}
- **Every mainstream effort to model the economic impacts of AB 32 shows that the program is affordable** – even when you ignore most economic benefits of curbing greenhouse gas pollution.^{xxv}

- ⁱ “California Advanced Energy Survey,” Advanced Energy Economy Institute, December 2014. <http://info.aee.net/ca-jobs-report-14>.
- ⁱⁱ Ibid.
- ⁱⁱⁱ Ibid.; see also David Roland-Holst, UC Berkeley, “Climate Action for Sustained Growth: Analysis of ARB’s Scoping Plan,” April 19, 2010. <http://www.arb.ca.gov/cc/scopingplan/economics-sp/meetings/042110/rolandholst.pdf>
- ^{iv} David Roland-Holst, UC Berkeley, “Energy Efficiency, Innovation and Job Creation in California,” Next 10, October 2008. http://are.berkeley.edu/~dwrh/CERES_Web/Docs/UCB%20Energy%20Innovation%20and%20Job%20Creation%2010-20-08.pdf
- ^v “The West Coast Clean Economy: Opportunities for Investment & Accelerated Job Creation,” The Pacific Coast Collaborative, March 2012. http://globeadvisors.ca/media/3322/wcce_report_web_final.pdf.
- ^{vi} Ibid.; see also David Roland-Holst, UC Berkeley, “Climate Action for Sustained Growth: Analysis of ARB’s Scoping Plan,” April 19, 2010. <http://www.arb.ca.gov/cc/scopingplan/economics-sp/meetings/042110/rolandholst.pdf>
- ^{vii} “California’s Low Carbon Fuel Standard: Compliance Outlook & Economic Impacts,” CalETC, April 2014. <http://www.caletc.com/wp-content/uploads/2014/04/ICF-Report-Final-2.pdf>
- ^{viii} “AB 32 Climate Change Scoping Plan Document,” California Air Resources Board” <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>
- ^{ix} “Untapped Potential of Commercial Buildings: Energy Use and Emissions,” Next 10 and Collaborative Economics, July 2010. http://www.next10.org/next10/publications/untapped_potential.html
- ^x “The Economic Impact of AB 32 on Small Business: An Update,” The Brattle Group, October 2010. http://www.brattle.com/system/publications/pdfs/000/004/795/original/Executive_Summary-2010_Update_to_The_Economic_Impact_of_AB_32.pdf?1378772130
- ^{xi} “California Green Innovation Index, 6th Edition,” Next 10, May 2014. <http://next10.org/sites/next10.huang.radicaldesigns.org/files/2014%20Green%20Innovation%20Index.pdf>
- ^{xii} PwC Cleantech MoneyTree Report: Q4 2014.” PWC, February 2015. http://www.pwc.com/en_US/us/technology/publications/assets/pwc-moneytree-cleantech-venture-funding-q4-2014.pdf
- ^{xiii} PwC Cleantech MoneyTree Report: Q4 2014.” PWC, February 2015. http://www.pwc.com/en_US/us/technology/publications/assets/pwc-moneytree-cleantech-venture-funding-q4-2014.pdf
- ^{xiv} “California Advanced Energy Employment Survey,” Advanced Energy Economy, December 2014. <http://info.aee.net/ca-jobs-report-14>
- ^{xv} “California Green Innovation Index, 6th Edition,” Next 10, May 2014. <http://next10.org/sites/next10.huang.radicaldesigns.org/files/2014%20Green%20Innovation%20Index.pdf>
- ^{xvi} “Cleantech Investment: A Decade of California’s Evolving Portfolio,” Next 10 <http://www.next10.org/cleantech>
- ^{xvii} “California’s Low Carbon Fuel Standard: Compliance Outlook for 2020,” ICF, June 2013. http://www.ca-greenbusinessalliance.com/wp-content/uploads/2013/06/LCFS-Phase-1-Report_Final.pdf
- ^{xviii} Go60mpg.org Coalition: http://www.go60mpg.org/docs/NRDC_UCS-State_by_State_Savings-FINAL_9-11.pdf, September 2011.
- ^{xix} James Fine, Christopher Busch, and Remy Garderet. “The Upside Hedge Value of California’s Global Warming Policy Given Uncertain Future Oil Prices,” January 2012. <http://www.edf.org/sites/default/files/upside-hedge-value-jfine.pdf>
- ^{xx} “California’s Low Carbon Fuel Standard: Compliance Outlook for 2020,” ICF, June 2013. http://www.ca-greenbusinessalliance.com/wp-content/uploads/2013/06/LCFS-Phase-1-Report_Final.pdf
- ^{xxi} “California Green Innovation Index, 6th Edition,” Next 10, May 2014. <http://next10.org/sites/next10.huang.radicaldesigns.org/files/2014%20Green%20Innovation%20Index.pdf>
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- ^{xxiv} Expert Evaluation of the Report: “Understanding the Impacts of AB32” http://policyinstitute.ucdavis.edu/files/general/pdf/2013-05-09_Expert-Evaluation-of-BCG-Report.pdf
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